

**TOTTEN (C.A.L.)**

**LAWS OF ATHLETICS**

AND

**GENERAL RULES.**

(REVISED EDITION.)

COMPILED FOR THE USE OF THE U. S. ARMY.



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By C. A. L. TOTTEN, FIRST LIEUT., FOURTH ARTILLERY,  
Professor of Military Science and Tactics, Yale University.

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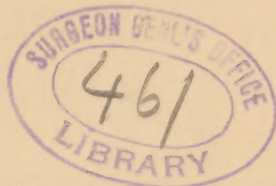
WASHINGTON :  
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C. A. L. TOTTEN,  
*U. S. Army.*



## PREFACE TO FIRST EDITION.

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The following compilation has been made for the use of troops in the Military Division of the Pacific, by 1st Lieutenant C. A. L. Totten, 4th Artillery, kindly assisted by Colonel Horace Fletcher, ordnance officer, 1st Division C. N. G., and president of the Olympic Athletic Club of San Francisco, California. It has been chiefly drawn from the standard authorities mentioned below :

"General Rules and Laws of Athletics of the Olympic Athletic Club of San Francisco, California ;" Hand-book of Gymnastics and Athletics," Ravenstine and Hulley ; "Laws of Athletics," by William Wood ; "Walker's Manly Exercises," by Craven ; "A Military System of Exercises," by Archibald Maclaren.

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## PREFACE TO REVISED EDITION.

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This little work is revised, by request, for free distribution in the Regular Army of the United States. It is trusted that those interested in the present revival of athletics in the service will recognize it as at least a valuable *vademecum* in premises.

In the present revision the author is particularly indebted to Mr. Walter C. Camp (Yale) for valuable help. He also desires to thank Messrs. A. G. Spalding & Bros. for their courteous permission to incorporate in this manual the "Foot-Ball Rules," of which they hold the copyright.

C. A. L. TOTTEN,

*U. S. Army.*

MILITARY DEPARTMENT S. S. S. OF YALE,

*New Haven, Conn., April 20, 1891.*



## INTRODUCTORY REMARKS.

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Athletic contests had their origin among those ancient nations whose principal incentive was war. The habitual and almost exclusive use of "hand-weapons" in the close combat of ancient days rendered strength, skill, and endurance so necessary to the individual soldier as to excite an universal interest in all athletic efforts. The celebrated Grecian games were the outcome of this interest; their periodic recurrence drew together the finest types of human development, and not only attracted their audiences from all other countries, but gave to Greece soldiers whose pre-eminence in arms secured that incredibly swift conquest of the world to Alexander the Great.

Modern warfare employs a far different class of arms than those used upon ancient battle-fields. Invention and discovery have put into the hands of the soldier of to-day weapons that hurl bolts as deadly and unerring as were those of fabled Jupiter. They store for him an energy the exercise and expenditure of which in some respects limit the demand upon his personal supply.

The great strength required in close personal combat can in a large measure be dispensed with by skillfully educating the faculties which particularly govern "long range fire." Nevertheless, activity, endurance, and, indeed, perfect bodily culture, too much neglected in our system of military training, are important requisites in a modern army. As elements, their possession must ever go far toward insuring success to that contestant having their advantage over an adversary without it.

Considering the results depending upon the Army, the demands it is expected to meet, and the care bestowed upon it, there is no community in which the cultivation of athletics is more necessary or can be better promoted. It is a small body of well-provided, healthy men, living much in the open air, and, when active operations commence, is always called upon to do, and is expected to do well, an immense amount of work. Yet the supply of surplus strength that the ordinary military pursuits are able to store up is seldom such as to meet at once and fully the sudden and long-continued demands so often put upon it. This, however, is only the fault of the present military system, and is open to an immediate correction by the Army itself. Let the skill with which the modern soldier has learned to use his rifle be supplemented by a proper cultivation of bodily strength and endurance. These requisites to military achievements will be as inevitably demanded of him upon the modern field of battle as they ever were



of his ancient predecessor in arms in the personal encounter. In their possession he will accomplish results otherwise impossible, and have, moreover, an invaluable reserve wherewith to meet whatever drain may come upon his powers.

It is therefore proposed to invite attention, as the War Department has so often done before in a general way, to practical methods for the hardier physical development of our troops. Interest in athletic games throughout the United States is greater than ever before, and it can not be doubted but that military competitors for athletic honors can secure brilliant reputations, which will redound to the credit of the Army and the Country. An interest to the individual soldier and advantage to the service as great and wide-spread as that in target practice may soon be expected to grow out of such contests. The field of competition is infinitely broader and the opportunities of excelling all the greater ; hence results as honorable to the soldier and as beneficial to the Army as those it has so quickly won at Creedmoor may also be expected.

Since fine perceptive faculties and strong nerves always accompany activity and endurance, it necessarily follows that skill in rifle practice will be promoted by physical training.

It is suggested that each company should have its record of vital statistics ; in it the initiatory effort of every man who enters any of the games and trials of strength that compose the list of amateur athletics should be recorded. Drills, out-of-door exercise, and games can then be so appointed as to become a pleasure and a continuous course of physical training. Under such a system each month would bring progressive improvements. One day each year might then be set aside with advantage for an athletic tournament, to be assisted in and supervised by commissioned officers. The records of the successful competitors should be carefully noted and published. For the best exhibition of activity and strength let the prize be a certificate of the fact, with the details of the particular feat excelled in. This, and the official publication and honorable mention of successful competitors by department and division headquarters and in the Army papers, ought to be an unfailing incentive to take part in exercises the benefit of which can not but soon become self-evident and satisfying. The post carpenter and blacksmith can make in a day all of the simple apparatus needed at such a tournament. The arrangements for a meeting can be as readily effected, and if the interest of but a single commissioned officer can be enlisted at each post, the success and perpetuity of the undertaking will be insured.

It is only by progressive training, culminating in contests, that men can know themselves, and thus find out what they can do ordinarily and what in an emergency ; what expenditure of energy may be called for ; what military achievements they may undertake without failing ; and, finally, what amount of training is required to fit them for their best efforts.



## EXTRACTS FROM HAND-BOOK OF ATHLETICS.

### *Hygiene.*

The healthful influence of athletics, carried on with prudence and discretion, is generally acknowledged.

Exercises act beneficially by increasing the circulation of the blood ; but when the beatings of the heart become excessively rapid and irregular, care should be taken to avoid those exercises which produce these symptoms. In a healthy man the heart is felt to beat two fingers breadth below the nipple of the left breast. Persons suffering from organic disease of the heart, and those of apoplectic habits, with short necks and an inclination to corpulency, should be specially careful, and take medical advice before exercising violently or entering into any contest of endurance.

The breath should be properly regulated whilst undergoing exertion. Breathe slowly ; thus the muscles of the belly become tense and fortify the ribs and pelvis. Failures in exercises are frequent in consequence of not keeping the muscles of chest and belly sufficiently tense, and accidents, such as rupture, are produced by exhaling at an improper time. By proceeding gradually from easy to difficult exercises, this danger is avoided, and the athlete learns to breathe correctly by habit. Exercises should never be carried far enough to produce panting or a pain in the side.

The benefits of exercise upon the lungs are greatly increased by carrying them on in the open air.

The amount of exercise beneficial to each particular individual varies. Excessive exercise causes a feeling of pain in the muscles, a feverish excitement of the nerves, and generally disturbs the health. \* \* \* But not only excessive exercise, but one-sided exercise is injurious. For instance, if one group or set of muscles is exercised to the exclusion of the others, they will only grow to a certain point, and then waste away. Make it a rule to bring as many muscles as possible into play, and to develop them harmoniously.

The amount of clothing necessary varies according to temperature and individual constitution. Less clothing is required when exercising ; but as soon as the exertion is over the heat of the body rapidly declines, and additional clothing should be put on. The practice of pulling off the shirt after the exercises are over and washing the body down to the waist with cold water should not be encouraged, as it is liable to induce chills. When

returning from a walk, and if very warm, put on additional clothing until the normal heat of the body is restored, to prevent taking cold. It is very important that clothing worn next the body should be washed and changed frequently.

Tight belts are positively injurious, for they press upon intestines, stomach, and liver, and do more injury to the organs of digestion than can be made good by exercise. But a belt with elastic side-springs, which expands easily to the extent of six and more inches, may be worn with safety.

Food and drink should never be taken immediately after exercise, nor should exercise be taken for some time after each meal.

Of all drinks pure water is the most wholesome. Take it frequently when necessary, but in small quantities, and not too cold. Water is not liable to injure if exercise is continued afterwards. When taken freely while in a copious state of perspiration, the exercise should not be suddenly stopped. At such times it should be used with caution, and only in small quantity.

### *Cleanliness.*

Every man while training should sponge the body daily from head to foot. With a weak constitution, tepid water and the use of a flesh-brush or rough towel, so as to produce reaction on the skin, is the safest.

### *Training.*

For men in the ordinary vocations of life the severe system generally pursued is not only irksome but often injures the health instead of improving it. A man should always be in fair training. Let him lead a life of temperance; let him carry on bodily exercises regularly, but without excess; and he will be prepared at all times to enter himself for competitions. The diet should be plain, mixed vegetable and animal (with a certain amount of fat). Drink tea in moderation, water in plenty, but avoid spirits. Cleanliness must be carefully attended to. Exercise should be taken regularly, and those things should be practiced most frequently in which the athlete desires to compete, though not to the exclusion of other exercises.

### *A rule for daily routine.*

Get up at 7; take a sponge-bath and rub well with a coarse towel. Then take the clubs or dumb-bells, or some other apparatus at hand, and work away for some minutes, introducing occasionally some exercise for the legs. Do not carry these exercises far enough to perspire, but should perspiration come on, rub down with a dry towel before dressing completely.

After a few minutes' interval devoted to reading or conversation, have breakfast, consisting of tea or coffee, with stale bread and butter, a couple of eggs, a chop, chicken, or steak. After breakfast proceed to your daily duties.



Dine at 1 or 2. The food may be underdone or not, according to taste, and a certain amount of fat is advisable. Meat baked, roasted, or stewed is the most nourishing, and beef or mutton preferable to other kinds, though in all these things man requires variety. Bread and vegetables are essential.

The daily duties performed, go home, and at about 6 o'clock have tea, with some toast or bread and butter, a few radishes, &c.

At about 7:30 walk four or five miles, alternate quarters rapidly till the last half mile, or go through such room exercises as are specially needed to increase the strength of certain muscles, or reduce the weight, resting after each exercise, and avoiding too much fatigue. When done, refresh the hands and face with water, and cool off gradually without exposure to draft. Take a light supper at 10 o'clock.

At 11:30 prepare for bed. Change, of course, the undershirt, and before lying down rub with a dry towel. Have blankets sufficient to keep warm, but not more.

If this is done twice a week, or at most three times, it is all that is needful.

Pedestrians frequently suffer from sore feet and blisters. \* \* \* It is a good plan to dip the feet in very hot water for one or two minutes before the start, then wipe them dry and rub with soft soap until there is a lather. At the close of the day, should the feet be sore, wipe them with a wet cloth, and rub them with bear's grease, deer's fat, tallow, soap, or spirits. If blistered, pass a thread of silk through each, and tie the ends together to allow the fluid to ooze out. When making a long halt in the middle of the day, take off boots and socks and wash the feet in cold water.

Soft corns between the toes are best cured by using lunar caustic.

When on the march or a pedestrian tour be careful of the diet and do not eat too much or too often. Never take spirits when exhausted, unless it be towards the close of the day's work, *but some warm tea* or coffee. Onions or garlic, chewed, is a good remedy against thirst.

### *Running.*

The double-step of the soldier is that kind of running of the greatest service, and ought to be practiced whenever there is an opportunity. One hundred and eighty short leaps are made in a minute, and allowing three feet to each leap, a mile is run in less than ten minutes. Men not carrying arms and accouterments can do more with ease, as a matter of course. In running the chest is kept steady; the breathing should be slow, the mouth closed, the arms are bent, and assist in the forward movement by swinging forwards. The legs must be raised as little as possible.

Men, to run long distances, should increase the practice gradually from day to day. Let them run five minutes the first few days, then ten, and so on, until they are able to run an hour (six miles) or more without losing



their breath. Any man feeling the least pain in the side should come to a walk or stop altogether.

After the run most men will be perspiring, and must not be allowed to stand still. They should then be made to march at an ordinary pace for some fifteen minutes, and to wear away the tediousness of such a walk they should sing a chorus or perform tacto-gymnastical exercises. The run should not take place round and round the same place but on different roads fairly marked off each quarter of a mile.

## EXTRACTS FROM A MILITARY SYSTEM OF EXERCISES.

### *Course for recruits.*

The athletic training of recruits should commence simultaneously with the squad drill without arms ; and in order that this shall not interfere with the prescribed musketry course, under ordinary circumstances recruits should not be given the musket for the first month after joining. During that time the training exercises are to form a component portion of the ordinary recruit drill.

### *Running drill.*

During the first *fortnight* the distance run is not to exceed from 300 to 500 yards. For the second fortnight the distance may be increased to 600 and 800, and for the third fortnight to 900, at the end of which time the practice is to be carried on daily at 1,000 yards, the men running on alternate days with arms and accouterments.

The pace is not to exceed six miles an hour.

Care must be taken that men are not exercised at the full distance of 1,000 yards until they shall have gone through from four to six weeks' preliminary practice at the shorter distances.

Where the ground will admit of it the men may be run 15 or 20 abreast in single rank, otherwise by companies in "fours."

### *Walking.*

A short course for walking and running should be formed 100 yards long and if possible 16 yards wide. There should be a permanent post at each end and a permanent mark to "toe" at starting.

The same course or practice ground will do for both walking and running, and the same manner and amount of instruction for the one will in most instances be found suitable for the other. In all cases, as stated above, there should be a measured course of 100 yards, and, when practicable, a measured quarter, half, and whole mile. The first should be sufficiently broad for a squad of ten or fifteen men to walk or run abreast at open order, the second should be the breadth of an ordinary path. The initiatory practice in walking should be on the first of these and should be performed quite irrespective of time, correct action and position being the sole points to be aimed at ; these acquired, the longer courses should be used. The mile has been walked in much less than seven minutes, but a mile in twelve minutes on the public highway is good walking.

The same rules will apply to running ; a correct action and position, quite irrespective of time, should first be obtained on the first course ; these should then be practiced at half speed, and ultimately at the highest rate of speed.

*The race at half speed* should be at the rate of about 35 seconds to the 100 yards. It would be difficult to over-estimate the practical value of running at half speed or the double step.

*The race at speed* should be restricted to the 100 yards, except in the free practice, which, after the necessary instruction, it is desirable to encourage.

*The race carrying weights or implements* may be on any course, short or long, and with or without obstacles; but in every case it must be undertaken carefully and thoughtfully, and only after practice at all the preceding. \* \* \* But it should never be forgotten that as this is essentially a practical exercise, the burden should be or should represent as closely as possible an object likely to be used in the actual occupations of the soldier, such as a ladder, plank, pole, a round or other shot, and when fairly practiced in these, men should be taught to carry each other short distances in the manner and positions causing the least fatigue and hindrance to progression.

*The race carrying arms and knapsack* may be over a course of any length, and presenting obstacles of any kind, natural or artificial; in fact, it should be practiced over every course, and at all rates of speed, and should be looked upon as the culminating exercise in walking and running, for in it may be represented the results of all previous practice and training. In the short or long walk or race on the level surface, the weapon should be borne at the "trail," and frequently changed from right to left; in ascending an inclined ladder, in the right hand at the "carry; and in vaulting it should, previous to the vault, be carefully deposited beyond the barrier, resting on the butt. The knapsack should never be moved from the back, but in the long flat race, where its motion of rising and falling with the action of the body becomes oppressive, the hand not employed in carrying the weapon may be passed back under it to arrest this motion, or the sling of the rifle may be passed round the upper part of it, the butt upwards and the stock diagonally crossing it, the barrel being grasped near the muzzle. As in the race carrying weights, every change of position is a relief.



## EXTRACTS FROM LAWS OF ATHLETICS.

The important object of athletic education is not merely to furnish power to travel great distances, carry great burdens, or lift great weights ; it is to develop that condition of body and amount of vital capacity which shall enable each man in his place to pursue his calling, and work on in his working life, with the greatest amount of comfort to himself and usefulness to his fellow-man.

### *Physical exercise and its results upon bodily health.*

No man need at the present day apologize for the attention he may pay to athletic exercise. The time is past when men can be told that it is a needless waste of time to devote forty or sixty minutes out of the twenty-four hours in rowing, walking, running, or any other of the many exercises that will give tone and strength to the muscles.

Preparation or training is to supply strength where there is weakness, not to develop any particular part of the system at the expense of the rest. It must be borne in mind that the true object of training is, and should be, not to afford proficiency in any one particular kind of exercise, but to bring those important organs and muscles which are less directly engaged in the ordinary course of the exercise into such a condition as to enable them to support an unusual effort, or a strain such as they are quite unaccustomed to.

That there may come great injury and permanent ailment from athletic games and exercises, when continued beyond the power of endurance, there can be no doubt. But this arises only from inexcusable imprudence. Fainting and pain in the heart or head, which comes at the very height of a severe strain upon endurance, does not come without premonition ; and never when men have been properly trained and are in good condition. Athletics mean permanent health and strength, not lasting ailment and weakness ; the former will surely come if only a PROGRESSIVE course of exercise is followed.

Every thoughtful person must know that a sudden strain on the heart, particularly if the person is not in training (and here the great advantages of training are apparent), may be the cause of fatal trouble ; the loss of blood from the lungs, which may occur, is the natural relief to the state of tension. There is also the important fact, that can not be too often repeated, that long-continued running or walking, if pursued to excess, can and will produce disease of the heart. In daily life we may be called upon at any moment to make an exertion which, if we are unprepared for, may be injurious. Therefore, every man should keep himself in such condition as to be prepared to bear the strains of ordinary life with indifference ; and though

he may have no desire to be considered an athlete, he will perceive the salutary object which athletes have in view in training.

### *Regimen.*

The food and fluids which are known to best improve the condition of the blood are beef, mutton, chicken, water, and tea, and as a rule they will agree with everyone's physical peculiarities. There are other requisites in training—sleep, air, bathing, clothing, &c. The duration of sleep must be left entirely to the demands of the system, and should not be interrupted. The want of physical exercise seems to preclude satisfactory sleep, while the athlete takes his eight hours and awakes refreshed and strong. The necessity of ventilation in the bedroom must be insisted upon by leaving the window open at the top at all seasons of the year. The cool or tepid bath has become essential to the comfort of most men; every athlete has some experience of its use after active exercise. Remember, this, like other good things, must not be carried to excess. Cool water can generally be used with safety soon after walking, running, rowing, &c., while the body is warm and perspiring; but to guard against any danger, strip and rub dry, keeping up a brisk circulation—then the quick application of water.

### *Sanitary precaution.*

The dress should in every way be made to suit the freedom of movement which is required in walking, running, rowing, &c. The principal point, and the one that demands your particular attention, is the prevention of cold directly after the exercise. A flannel wrapper, or overcoat, to wrap around the body and limbs, will answer. This is so important that no one in training should be without it.

The sunlight exercises an important influence upon the growth and vigor of men.

*George Seward's system of training for walking and running.*

*Rise between 6 and 7 a. m.*—Sponge the body and rub dry.

*Exercise.*—A brisk walk of from three to five miles, according to the weather; wash, rub dry, and good hand friction.

*Breakfast at 8 or 8:30.*—Oatmeal; mutton chop; broiled chicken; bread one day old; toast; tea.

*Exercise, 10:30.*—Starting on a slow walk, increase the pace to a sharp run; go a good distance if the condition and weather will permit, always ending with a half mile at a moderate walk.

*Dinner at 1 p. m.*—About the same as at breakfast, with the addition of some fresh vegetables, but sparingly.

*Exercise, 3:30.*—Walking and running moderately, with a light dumb-bell in each hand; occasionally drop the bells, and spurt a hundred yards or so.

*Supper at 7.*—Two fresh eggs, fresh berries or stewed gooseberries : with bread, toast, and tea.

*Bed at 10.*

### *Swimming.*

Swimming is not only useful in promoting great muscular strength, but has the happiest effect in tranquilizing the nervous system.

It is not only the most pleasureable exercise in summer, but one of the most beneficial.

A knowledge of the art is so often important to the soldier in the discharge of his duties that it should be promoted by all in authority.

While learning to swim with the sweep of the arm is with most persons attended with some difficulty, yet to swim by walking or treading the water demands no effort which the individual is not accustomed to make. There are but two requisites—confidence, and that the arms be kept under water.

The mere act of swimming in itself is a perfectly simple operation, and can be acquired in a very few lessons. The pupil ought, in the first instance, to commence in water not deeper than his waist, into which he should walk gradually. The ordinary practice, and one which is unfortunately too often recommended and as often followed, of plunging in head first, can not be too severely condemned, for, apart from the danger of drowning, the shock to the system frequently produces an amount of discouragement and nervous trepidation which require some time to overcome. When the pupil has advanced to the depth stated and there is no sense of fear, he may gradually immerse himself; this may be repeated a number of times. Next he should try to pick up some object from the bottom, and he will find this a very difficult task. The resistance of the water will, however, soon give him confidence in its buoyant properties. This experiment will soon practically establish the fact in the mind of the pupil that his body is lighter than water. After this he may advance a little deeper, up to the armpits, and tread the water; after he feels how easy it is to do this, he must face the shore and place the hands, the fingers being close together, about four inches under water, leaning on the water with the palms, the hands being slightly concaved, and throw himself forward. He is immediately to sweep the hands around, forming a half circle, then drawing the elbows close to the body and the hands to the chest; the legs, while doing this, must be drawn up ready for their next effort, the feet turned out; and again, as he projects his hands out in front, he must kick out the legs to their fullest extent, and wide apart; then press them together at the end of the stroke and again draw up the feet. It is of the utmost importance, in striking out with the legs, that the feet be perpendicular to the leg; at the end of the kick the foot drops, so that in drawing the leg up again the insteps or upper part of the foot offers as little resistance as possible to the water. This action of the ankle joint is absolutely necessary before perfection can be obtained.



It is decidedly better to learn how to swim first in fresh water, because its buoyancy is less than that of salt water, and thus a perfect confidence will be established under all contingencies.

### *Miscellaneous.*

By introducing the principle of "handicapping" into amateur contests the interest in athletics has been greatly fostered. Few men can be induced to compete on equal terms with an athlete of marked superiority, but when a competent officer is authorized to handicap the competitors, each entry has a fair chance to win, and of the many who are thus induced to enter for their first public contest, not a few eventually become promising athletes.

The athletic code is now so stringent as to exclude from the official "*record*" all irregular accomplishments. Great care must therefore be exercised in the arrangement of every athletic tournament so as to leave no doubt of the official recognition of such of its performances as, from their excellency, might entitle a victor to a championship. In the following compilation the body of the rules are those that now govern all amateur competitions here and in England, and no deviation can be made from them without vitiating the "*record*." Those parts of the work that are included in brackets [ ] are explanatory, introduced for special military purposes, or are not yet formally adjudicated upon by the Amateur Athletic Union. They are, however, drawn from standard athletic authorities; are recommended by the compilers; and, if they are hereafter made the received rules of each branch of the "American Army Athletic Association," all performances under them will be admitted, as such, into the athletic "*record*" alongside of those made by the Amateur, Inter-Collegiate, Olympic, and other athletic associations.

The adoption of the Army Creedmoor 100-yard target in base-ball, javelin, and grenade throwing for accuracy is an innovation, the fitness of which, however, it is believed, will be apparent to all military men. It furnishes a direct standard of comparison with the ordinary target practice, is itself a well-known and authorized short-range target, and carries into this class of games a system of marking the excellence of which has long been thoroughly established.

## RULES FOR THE GOVERNMENT OF ATHLETIC MEETINGS.

### *Officers.*

The officers of an athletic meeting shall be : One clerk of the course, with assistants if necessary ; one starter ; one judge of walking, with assistants if necessary ; three time-keepers ; three judges at the finish ; three measurers ; and one referee.

#### *Clerk of the course.*

He shall record the name of each competitor who shall report to him.

Shall give him his number for each game in which he is entered, and notify him before the start of every event in which he is engaged.

The assistants shall do such portions of his work as he may assign to them.

#### *Starter.*

He shall have entire control of competitors at their marks.

Shall strictly enforce law No. 3, and shall be the sole judge of the fact as to whether or no any man has gone over his marks. His decision in such cases shall be final and without appeal.

#### *Judge of walking.*

He shall have entire control of competitors during the race ; shall strictly enforce Law No. 8 ; and his decision as to unfair walking shall be final and without appeal.

The assistants shall do such portions of his work as he may assign to them.

#### *Scorer.*

He shall record the laps made by each competitor, and call them aloud when tallied, for the information of these contestants.

He shall record the order of finishing, and the times of the competitors in walking or running races.

The assistants shall do such portions of his work as he may assign to them.

#### *Time-keepers.*

Each of the three time-keepers shall time every event, and in case of disagreement the average of the three shall be the official time.

Time shall be taken from the flash of the pistol.

#### *Judges at the finish.*

Two shall stand at one end of the tape and the third at the other. One shall take the winner, another the second man, and the other the third man ; they shall also note the distances between the first three as they finish.

In case of disagreement the majority shall decide.

Their decision as to the order in which the men finish shall be final and without appeal.

*Measurers.*

They shall measure and record each trial of each competitor in all games whose record is one of distance or height.

Their decision as to the performance of each man shall be final and without appeal.

*Referee.*

He shall, when appealed to, decide all questions whose settlement is not otherwise provided for in these rules, and his decision shall be final and without appeal.

*Competitors.*

Immediately on arriving at the grounds, each competitor shall report to the clerk of the course and receive his number for the games in which he is entered.

He shall inform himself of the times at which he must compete, and will report promptly at the start, without waiting to be notified.

No competitor will be allowed to start without his proper number.

*Protests.*

Verbal protests can be made at or before any athletic meeting against a competitor or team, by any competitor or club competing, but such protests must be subsequently, and before action thereon, made in writing and sworn to, and duly presented to the qualification committee, under whose auspices the meeting is held; it is, however, provided that this committee reserve to itself the power to disqualify any and all competitors without such protests at any time, for such reasons as may seem to said committee good and sufficient.

*Inner ground.*

No person whatsoever shall be allowed inside the track except the officials and properly accredited representatives of the press.

The authorized persons will wear a badge, and intruders will be promptly ejected. Competitors not engaged in the game actually taking place will not be allowed inside or upon the track.

*Track.*

The measurement of tracks shall be eighteen inches from the edge, which edge shall be a solid curb raised three inches above the level of the track. [When curbs are not practicable, flags and ropes should mark their place at the curves.]



## IMPORTANT DEFINITIONS.

*Full equipments.*

[In all military competitions this term shall mean the full outfit of regulation arms, ammunition, accouterments, &c. It is sometimes known as "heavy marching order." It shall weigh, all told, not less than sixty pounds.]

Where the regulation equipment is of less or greater weight, the competitor shall have his load handicapped to the standard. Additional weights are to be carried in some approved military manner.]

*A record.*

[“Only such feats as are accomplished in public matches or meetings, and the genuineness of which is attested by properly constituted judges and officials, are entitled to a place on record.”]—*Laws of Athletics.*

*Fair heel-and-toe walking.*

[“Walking is a succession of steps not leaps, and with one foot always on the ground. By the term ‘fair heel-and-toe’ is meant that, as the foot of the rear leg leaves the ground, and before the toes have been lifted, the heel of the foremost foot should be on the ground.”]—*Chas. Westhall.*

*An amateur.*

[“An amateur is a person who never competed in any open competition, or for a stake, or for public money, or for gate money, or under a false name; or with a professional, for a prize or where gate money is charged; nor has ever, at any period of his life, taught or pursued athletic exercises as a means of livelihood, or for gain or any emolument.”]—*Laws of Athletics.*

## STANDARD ATHLETIC EXERCISES IN GENERAL.

The 100-yards dash.  
Running 220 yards.  
Running 440 yards.  
Running 880 yards.  
Running one mile.  
Running three miles.  
Walking one mile.  
Walking three miles.  
High jump, standing.  
High jump, running.  
Broad jump, standing.  
Broad jump, running.  
The window leap.  
Three or more standing jumps.  
The hop, step, and jump.

The hitch and kick.  
Hurdle racing, 120 yards, 10 hurdles.  
Vaulting.  
Pole leaping, high.  
Pole leaping, broad.  
Putting the shot, 16 pounds.  
Throwing the hammer, 16 pounds.  
Throwing the 56-pound weight.  
Throwing the baseball, distance.  
Throwing the baseball, accuracy.  
Climbing the rope.  
Chinning the bar.  
Putting up the 56-pound weight.  
Tug of war.

### *Miscellaneous athletic contests.*

Bag race, wheelbarrow race, obstacle race, three-legged race, hop race, and tub race.

### *Military.*

Throwing the javelin, distance.  
Throwing the javelin, accuracy.  
Standing jump, { high, } full equipments.  
                          { broad, }  
Running jump, { high, } full equipments.  
                          { broad, }  
100-yards dash, full equipments.  
440-yards race, full equipments.  
1-mile race, full equipments.  
Obstacle race (120 yards), full equipments.  
Rolling the artillery wheel (100-yards race).

### *Games.*

Push-ball, club-ball, base-ball, foot-ball, the cock-fight, prisoner's-base, and hare and hounds.

## LAWS OF ATHLETICS.

### I.

#### *Attendants.*

No one shall accompany a competitor on the scratch or in the race.

### II.

#### *Starting signals.*

All races (except time handicaps) shall be started by report of pistol—the pistol to be fired so that its flash may be visible to the time-keepers.

A snap cap shall be no start.

There shall be no recall after the pistol is fired.

Time handicaps shall be started by the word "go."

### III.

#### *Starting.*

When the starter receives a signal from the judges at the finish that everything is in readiness, he shall direct the competitors to get on their marks. Any competitor starting before the signal shall be put back one yard.

For the second offense, another yard, and for the third shall be disqualified. He shall be held to have started when any portion of his body touches the ground in front of his mark.

Stations count from the inside.

### IV.

#### *Keeping proper course.*

In all races on a straight track each competitor shall keep his own position on the course from start to finish.

### V.

#### *Change of course.*

In all races on other than a straight track, a competitor may change towards the inside whenever he is two steps ahead of the man whose path he crosses.

### VI.

#### *Fouling.*

Any competitor shall be disqualified for willfully jostling, running across, or in any way impeding another.

## VII.

*Finish.*

A thread shall be stretched across the track at the finish four feet above the ground. It shall not be held by the judges, but fastened to the finish posts on either side, so that it may always be at right angles to the course and parallel to the ground. The finish line is not this thread, but the line on the ground drawn across the track from post to post, and the thread is intended merely to assist the judges in their decision. The men shall be placed in the order in which they cross the finish line.

## VIII.

*Heats.*

[If races are run in heats, the two best in each trial heat shall run in the deciding heat.]

## IX.

*Walking.*

The judges shall caution for any unfair walking, and the third caution shall disqualify the offender.

On the last lap an unfair walker shall be disqualified without previous caution.

[Walking is not so acceptable for amateur competitions as running, principally in consequence of the disputes likely to arise should one of the competitors begin to run.]

## X.

*Hurdles.*

The *regular* hurdle race shall be 120 yards over ten hurdles, each 3 feet 6 inches high.

The first hurdle shall be placed 15 yards from the scratch, and there shall be 10 yards between each hurdle.

There may be (by special announcement) hurdle races of different distances and different number and height of hurdles.

[Hurdles must be cleared with a jump; touching the hands to the hurdle is a "foul," and disqualifies the offender.]

## XI.

*Military races.*

[These shall be in "full equipments," and shall include the 100-yard dash, the 440-yard run, and the 1-mile run; they shall in other respects be governed by the laws for free racing.]

## XII.

*Rolling the artillery wheel.*

[The race shall be for 100 yards. The wheel shall be that of the Regulation field-carriage.]



Competitors and wheels shall stand toeing and tangent to the scratch at the start, and should be at 10-yard intervals. The wheels may be handled at will. The race should be governed by laws II, III, IV, and VI.]

## XIII.

*Jumping.*

No weights or artificial aid will be allowed in any jumping contests, except by special agreement or announcement.

When weights are allowed there shall be no restriction as to size, shape, or material.

[The ground must be "level."]

## XIV.

*Running high jump.*

The height of the bar at starting and at each successive elevation shall be determined by a majority of the qualified competitors.

In case of a tie, the referee shall decide.

Three tries allowed at each height. Each competitor shall make one attempt in the order of his name on the programme, and those who have failed, if any, shall have a second trial in regular order, and those failing on this trial, shall then take their final trial.

Displacing the bar counts as a "try."

Three balks shall count as a "try."

A competitor may omit his trial at any height, but if he fail at the next height he shall not be allowed to go back and try the height which he omitted.

[Where jumping is practiced on hard ground, temporary, if not chronic, disability may always be expected. Too much care cannot therefore be given to have the "alighting" place prepared, so that it will be free of any hard substance, as stone, and elastic, and thus prevent a shock from which injury may follow.

If the jumping ground is good thick sod, it will be sufficient if it be saturated with water the night before. If, however, hard and gravelly soil, the "alighting" place must be excavated to the depth of a foot and filled with sand and sawdust, or tan bark; or straw or brush covered with clay.]

## XV.

*Pole leaping.*

The law for this game shall be the same as that for running high jump.

[The uprights should be 9 feet apart, and the bar be placed upon pins that project 2 inches. Competitors may provide their own poles, which should be of good pine, iron shod at one end, 10 to 12 feet long, and 1½ inches thick.]

## XVI.

*Standing high jump.*

The competitors may stand as they please, but must jump from the first spring.

The height of the bar at starting and at each successive elevation shall be determined by a majority of the qualified competitors. In case of a tie, the referee shall decide.

Three tries allowed at each height. Each competitor shall make one attempt in the order of his name on the programme, then those who failed, if any, shall have a second trial in regular order, and those failing on this trial shall then take their final trial.

Displacing the bar, and nothing else, counts as a "try."

A competitor may omit his trial at any height; but if he fails at the next height, he shall not be allowed to go back and try the height which he omitted.

## XVII.

*Running broad jump.*

The competitor shall have unlimited run, but must take off behind the scratch.

Stepping any part of the foot over the scratch in an attempt shall be "no jump," but shall count as a "try."

Each competitor allowed three trials, and the best three men have three more trials each.

Each competitor shall be credited with the best of all his jumps.

The measurement shall be from the scratch line in front of the jumper's feet to the nearest break of the ground made by any part of his person.

Three balks shall count as a "try."

## XVIII.

*Standing broad jump.*

Competitors must jump from the first spring.

Stepping any part of the foot over the scratch in an attempt shall be "no jump," but shall count as a "try."

Each competitor allowed three trials, and the best three men have three more trials each.

Each competitor shall be credited with the best of all his jumps.

The measurement shall be from the scratch line in front of the jumper's feet to the nearest break of the ground made by any part of his person.

## XIX.

*Three or more consecutive standing jumps.*

[The law for this game shall be the same as that for the standing broad jump.]

## XX.

*Hop, step, and jump.*

[The law for this game shall be the same as that for the running broad jump.]

In the *hop* the competitor must spring and alight on the same foot, pass to the other in making the step, and finally alight on both feet in terminating with the *jump*.]

## XXI.

*Vaulting.*

[This is best practiced at a wooden wall, the upper board sliding in grooves, and being pegged tightly at each height.]

The wall must be fairly cleared. No part of the body save the hands may touch it. The law governing the game is in other respects similar to that for the standing high jump.

## XXII.

*The window leap.*

[This is a leap between two horizontal bars, the upper of which gradually closes towards the other.]

The height of the upper bar at starting, and at each successive variation, shall be determined by a majority of qualified competitors. In case of a tie the referee shall decide. The height of the lower bar shall remain at 2 feet.

The law governing the trials is the same as that for the running high jump.]

## XXIII.

*Military jumps.*

[These are standing or running, high and broad, and shall always be in "full equipment." The laws governing them shall be in all other respects the same as those for the corresponding free jumps.]

## XXIV.

*Hitch and kick.*

[Some resonant object is suspended from the bar employed in the high jumps, and kicked at successively by the competitors.]

The height of the object at starting, and at each succeeding elevation, shall be decided by the majority of qualified competitors.

In case of a tie the referee shall decide.

Three tries allowed at each height. Each competitor shall make one attempt in the order of his name on the programme, then those who have failed, if any, shall have a second trial in regular order, and those failing on this trial shall then take their final trial.



The competitors must spring, kick, and alight on the same foot. The run is unlimited.

Springing and kicking without touching the object kicked at counts as a "try."

Three balks count as a "try."

Touching the object with the foot or any part of the leg below the knee, counts as a fair kick, and nothing else.

## XXV.

### *Putting the shot.*

The shot shall be a solid iron sphere weighing sixteen pounds.

It shall be put from the shoulder with one hand, from between two parallel lines 7 feet apart.

Touching the ground outside either line with any part of the person before the shot alights, shall make the attempt "no put," which counts as a "try."

Each competitor allowed three trials, and the best three men have three more trials each.

Each competitor shall be credited with the best of all his puts.

The measurement shall be from the nearest break of the ground made by the ball, perpendicularly to the scratch line, extended, if necessary, to meet this perpendicular.

## XXVI.

### *Throwing the hammer.*

The hammer head shall be a solid iron sphere, weighing sixteen pounds, the handle shall be of hickory wood, and the length of the hammer and handle, over all, shall be 3 feet 6 inches.

The competitor shall stand at and behind the scratch, facing as he please, and throw with either or both hands.

Touching the ground in front of the scratch with any portion of the person before the hammer alights, shall make the attempt "no throw," which counts as a "try."

Letting go of the hammer in an attempt counts as a "try." Each competitor allowed three trials. Each competitor shall be credited with the best of all his throws.

If the head strike first, the measurement shall be from the nearest break of the ground made by it.

If the handle strike, one length of the handle shall be allowed from the mark made by the end of the handle toward the mark made by the head of the hammer, and the measurement shall be from this point.

The measurement shall be to the scratch line half way between the thrower's feet.

[When a run is allowed, it shall not be limited either before or after the throw, and the distance shall be measured from the toe of the foremost foot immediately before, or at the time of the delivery, to the pitch of the hammer.]

## XXVII.

*Throwing fifty-six pound weight.*

This shall be of solid iron, and any shape of weight and handle is allowed, provided the whole weight is fifty-six pounds.

The competitor shall stand at and behind the scratch, facing as he please, grasping the weight by the handle, and shall throw it with one hand.

Touching the ground in front of the scratch with any portion of the person before the weight alights, shall make the attempt "no throw," which counts as a "try."

Letting go of the weight in an attempt shall count as a "try."

Each competitor allowed three trials, and the best three men have three more trials each.

Each competitor shall be credited with the best of all his throws.

The measurement shall be from the scratch line in front of the thrower's left foot, to the nearest break of ground made by the weight exclusive of the handle.

## XXVIII.

*Throwing the javelin.*

[The standard weight of the javelin or pilum shall be four pounds. The shaft shall be of ash; it shall measure 7 feet in length and be  $1\frac{1}{4}$  inches in diameter. The end of the shaft shall be finished with a brass cap or ferrule, beyond which a stout wrought-iron pin or head shall project not more than 1 inch. The counterpoise shall be cylindrical, and shall be formed by wrapping a belt of sheet lead, 5 inches wide, around the staff. It shall be so located as to leave 3 clear inches of the staff between it and the head, and only enough lead to raise the finished pilum to the standard weight shall be so employed.]

## XXIX.

*Throwing the javelin for accuracy.*

[The target shall be the 100-yard Army Creedmoor. It shall be made of wood, and be located 15 yards from the scratch.

Each competitor is allowed a string of five throws, the results of which are to be scored in Creedmoor style. Passing beyond the scratch is "foul," and shall count as a "miss."]

## XXX.

*Throwing the javelin for distance.*

[An unlimited run is allowed, provided the pilum is delivered before crossing the scratch.

Touching the ground in front of the scratch while holding the pilum is "no throw," and counts as a "try." Each competitor is allowed three trials, and the best three men have three more trials each.

Each competitor is credited with the best of all his throws.

Measures are from the fall of the head, perpendicularly back to the scratch.]

### XXXI.

#### *Throwing the base-ball for accuracy.*

The ball shall be of regulation size and weight.

[The target shall be the 100-yard Army Creedmoor. It shall be made of wood, and be located 100 feet from the scratch.

A string of ten throws is allowed to each competitor, the result of which shall be scored in Creedmoor style. Passing beyond the scratch is "foul," and shall count as a "miss." Ties shall throw another string of ten balls.]

### XXXII.

#### *Throwing the base-ball for distance.*

An unlimited run is allowed, but the ball must be delivered before crossing the scratch, or the "foul" be regarded as a "try."

Three trials are allowed to each competitor, the best three having three other and final trials. Each competitor is credited with the best of all his throws.

The measure shall be from the point of fall to the scratch, and not from the dead ball, thereto.

### XXXIII.

#### *Throwing the hand grenade.*

[A grenade made on the principle of the "Ketchum hand grenade" (with the charge removed) shall be used. A small barb may be screwed into the fuse-plug. It shall be thrown for accuracy and distance. The same rules shall govern the game as in throwing the base-ball. In throwing for accuracy the distance shall be 30 feet. The weight of the grenade shall be eight pounds over all.]

### XXXIV.

#### *Climbing the rope.*

[The rope, say 57 feet long, should be suspended from the cross-trees of the flagstaff. Competitors are allowed to use hands and feet, but may not rest themselves by slinging the rope around any part of their person, nor can any competitor be permitted to ascend a second or third time if he puts his foot to the ground, or does not come down hand over hand. The staff is marked off in feet, beginning 7 feet from the ground.]



## XXXV.

*Tug of war.*

1. The ground shall be loosened to the width of 3 feet, and to a depth of not less than 6 inches.
2. The side crease shall be 12 feet from the center.
3. The mark on the rope must be over the center crease when the signal is given, and the team hauling that mark over the crease on its own side shall win.
4. No footing holes shall be made before the start.
5. The contestants shall not wear spikes.
6. The rope shall be  $1\frac{1}{2}$  inches in diameter.
7. Immediately before the contest, the captains of all the contesting teams shall draw their members.
8. Not less than five minutes shall be allowed each team between heats.
9. Captains shall toss for choice of sides before each pull ; but if the same two teams pull more than once during any meeting, they shall change ends at each successive pull.
10. With two teams, they shall pull the best two in three. With three teams, one and two shall pull, then two and three and three and one.  
With four teams, one and two shall pull, then three and four, and the winners pull the final.  
With five teams, first round, one and two, three and four, five has a bye ; second round, winner of first heat pulls with five, and the winner of this heat pulls the final with the winner of the second heat of first round.  
Where more than six teams are entered the arrangement of trials shall be on the same principle as in the above examples.
11. No man shall be substituted for another who has already pulled in one trial, nor shall any man be allowed to pull with more than one team in any of the trials for the same prize.
12. A time limit may be made.
13. The weights in the tug of war shall be : Feather-weight, 125 pounds and under ; light-weight, 150 pounds and under ; middle-weight, 175 pounds and under ; heavy-weight, over 175 pounds.
14. All weights shall be stripped.

## XXXVI.

*Contests of special skill.*

Sparring, fencing, wrestling, &c., are arts requiring special instructors, and should generally be left to special competitions, and their exhibition governed by the standard amateur codes.

## XXXVII.

*Putting up the fifty-six pound weight.*

[The weight shall be lifted from the ground in both hands, and raised to the height of the shoulder. It shall then be put up to the arm's full length

with one hand (body erect), lowered to shoulder height ; and, without a rest, again put up, and so on, at the rate of not less than fifteen times per minute. Competitors shall have but one trial each, which shall be made in the order of their names upon the programme.]

## XXXVIII.

*Chinning the bar.*

[The height of the bar shall be such that the tallest competitor will need a low stool to reach it. The support will be removed at the first rise of each competitor, and an indicator set for his toes to touch when at arm's length. Each legitimate lift shall be from arm's full length to chin over the bar. Each competitor shall have but one trial, to be made in the order of his name on the programme. The weights of competitors shall be classified as in the tug of war, and may be stripped. Each competitor shall be credited with his number of full lifts.]

## XXXIX.

*Marking.*

[For the various purposes of classification and general comparison, the following system of marking athletic performances is proposed. A simple examination of this code will show that any one who has a rightful claim to more than ordinary skill at particular athletic sports should be able to score therein upon this system anywhere from one to five marks. A failure to score even a single mark at any particular game is evidence of no special aptitude. A score of ten marks upon this system has never yet been made at any of the games below enumerated, and while such a score is certainly possible, it will be hard to attain, and it is highly improbable that it will ever be *exceeded*.

Scores of eight and in some games nearly nine marks are at present the highest that have ever been made, and correspond to the "best-in-the-world" records of champion athletes. Ten marks may, therefore, be safely regarded as the "best possible" score at each of the following games, and 200 marks, equal to 100 per cent., the best at the whole twenty.

It must be noticed that "*marks*" serve for a purpose entirely different from that accomplished by the "*record*," strictly so called ; the latter is always imperative and from it scores can readily be obtained.

When "full equipments" are carried, the limits given below from which the "marking" commences shall be one-half lower for distance or height competitions and one-half greater for those of time. Scores will be estimated from the new limits on the regular scale :

*Pedestrianism.*

100-yard dash.—1 mark for every second short of 18 seconds.

Half mile race.—1 mark for every 8 seconds short of 3 minutes.

1 mile walk.—1 mark for every 30 seconds short of 11 minutes.

*Jumping.*

High jump, standing.—1 mark for every  $3\frac{1}{2}$  inches above 37 inches.

High jump, running.—1 mark for every  $3\frac{1}{2}$  inches above 42 inches.

Broad jump, standing.—1 mark for every 9 inches beyond 7 feet.

Broad jump, running.—1 mark for every 18 inches beyond 11 feet.

Pole jumping.—1 mark for every 9 inches above 5 feet.

Hop, step, and jump, running.—1 mark for every 2 feet beyond 30 feet.

Hurdle race.—1 mark for every second short of 24 seconds.

Hitch and kick.—1 mark for every 7 inches above 5 feet.

*Throwing.*

Putting the shot, 16 pounds.—1 mark for every 3 feet beyond 25 feet.

Throwing the hammer, 16 pounds.—1 mark for every 10 feet beyond 50 feet.

Throwing the 56-pound weight.—1 mark for every 18 inches beyond 18 feet.

Throwing the base-ball.—1 mark for every 18 feet beyond 250 feet.

*Accuracy.*

Throwing the base-ball.—1 mark for every 2 points over 30 points (Creed-moor).

Throwing the javelin.—1 mark for every point over 15 points (Creed-moor).

*Climbing.*

127 feet of rope.—1 mark for each 10 feet beyond the first 27 feet.

*Lifting.*

Chinning the bar.—1 mark for every 2 lifts after 10 lifts.

Putting up the 56-pound weight.—1 mark for every 8 puts after the first 10 puts.]

## XL.

*Classification.*

The best score, in each game, obtained by any individual member of a company, regiment, &c., shall be the score of that company, regiment, &c., in each game.

Any individual who shall obtain in a regular tournament or meeting a score of at least 1 mark in each of the above games, and a total score of 100 marks in all of them, shall be termed a "champion of general athletics," and be entitled, as such, to a "prize certificate."

Champions of general athletics shall rank according to their scores, the one having the highest score being "*the champion general athlete.*"

Any individual who, at a regular tournament or meeting, obtains a score of at least 1 mark, each, in any one of the pedestrian, five of the jumping,



two of the throwing, one of the accuracy, and in either one of the climbing or lifting games, and whose aggregate in such ten games shall equal 50 marks, shall be termed a "general athlete," and be entitled, as such, to a "prize certificate."

Any individual the aggregate of whose best scores at all the foregoing games shall equal or exceed 50 marks, made in regular tournament or meeting, shall be termed "an athlete."

"Athletes" shall be divided into classes as follows :

1st class athletes.—Whose score is 100 marks or over.

2d class athletes.—Whose score is 75 to 99 marks.

3d class athletes.—Whose score is 50 to 74 marks.

And members of each class shall be entitled, as such, to "prize certificates."

## OUT-OF-DOOR GYMNASIUM.

We shall limit ourselves in this connection to the description of but four species of apparatus, viz : The horizontal bar, the parallel bars, the leaping pole, and vaulting horse. These are by far the most useful of the various gymnastic appliances. Upon them some fifty or more standard and fundamental exercises, which range in their scope over the development of most all of the more important muscles of the body, may be practiced ; and with them, and the simple outfit for field athletics, already described, the soldier fitting himself for the perfect discharge of his duties, and the lover of manly sports, can find ample opportunity for the highest physical improvement.

### *The horizontal bar.*

The bar may be either permanently fixed or be arranged for adjustment at any suitable height.

When the bar is to be permanently fixed, three posts will be found very convenient. In this case one post should be somewhat lower than the other two. These posts should be in line, and be fixed in the ground some 6 feet apart. The height of two of them may be from 6 to 7 feet, and that of the third (which should be in the prolongation of the other two) from 4 to 5 feet. A bar is extended across the tops of the two higher posts, and another from the top of the lower post to the corresponding height in the middle post. The bars may be of wrought-iron, but hickory is generally employed, and upon the whole more suitable. They should be smooth, round, and some  $2\frac{3}{4}$  inches in diameter. The posts should be about 8 inches square, and be so fixed as to withstand any amount of work on the bars without being loosened in the ground.

If the bar is to be adjustable, but two high posts are needed. They should be of the dimensions above given, and be fixed at the same distance apart. Previous to being placed in position, a groove about 6 feet long should be cut through each post to about 18 inches from the ground.

About twelve or fourteen holes should be bored through the posts, for iron pins to keep the bar at the required height. The bar should have the same dimensions as in the first case, but be provided in addition with a shoulder at each end to rest firmly against each post.

### *The parallel bars.*

Four posts should be fixed in the ground perpendicular on the inside, 18 or 20 inches apart at the ends, and about 5 feet 6 inches apart length-

ways, which will give the form of a parallelogram. These posts should be about 4 feet high, made strongly, and as near the same size as possible.

The bars may be of elm or other strong hard wood, free from knots, and should extend about a foot beyond the posts at each end, which will make them 7 feet 6 inches long.\* They should not be perfectly round but slightly flattened on both sides and about  $2\frac{1}{2}$  inches in the longest cross dimensions; their ends should be slightly rounded to fit the hollow of the hand.

### *- The leaping pole.*

This should be of a tough springy wood, about 2 inches in diameter and from 8 feet to 10 feet long, perfectly smooth, and shod with iron at the butt or lower end.

The exercises with the leaping pole may almost be viewed as belonging to recreative rather than systematized exercise, being essentially for the open air, and among the few which may be left for free practice after the learner has acquired a knowledge of the action and position of the different exercises. They are valuable as giving precision to the eye and hand, the power of calculating distance, and of rapidly determining the moment for executing a complicated movement, with the presence of mind to execute it, in addition to the physical exercise of the run and leap, the balance and descent.

### *The vaulting horse.*

This machine should be formed from a block of hard wood, about 5 feet 3 inches long, 14 inches broad, and 11 inches deep, the top being rounded off to a semi-circular shape and the section of the ends worked off to a semi-circle. The sides and top should both be hollowed out towards the center, where a section would be a flattened semi-circle, 12 inches by 9 inches. The object is to make the body of such a shape, by carefully rounding every possible angle and projection, that whether the horse be used from the sides or from the croup, nothing but the most convenient surfaces for the hands shall be presented. The body should be rubbed smooth with sand-paper, and the top and sides should be covered with strong leather, the upper portion being slightly stuffed with horsehair. The supports or legs may be formed with two deal standards at each end,  $3\frac{1}{2}$  inches by 2 inches, and 10 inches apart from out to out at the top, under the end of the horse, spreading to 2 feet 4 inches at the bottom, and resting upon a plate 5 inches by 3 inches and 3 feet long, firmly screwed to the floor or pinned to the ground. The standards should also spread longitudinally beyond the ends of the body.

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\* By introducing two additional posts in the prolongation of each side pair the length of the apparatus may, of course, be doubled.

## GAMES.

In alluding to games, Ravenstein and Hulley, in their "Handbook of Gymnastics and Athletics," remark that "A course of physical education cannot be considered complete without a liberal introduction of games. The number of athletic games is large, but it is better to confine one's self to a few, and to attain perfection in these than to practice many and remain a novice in all."

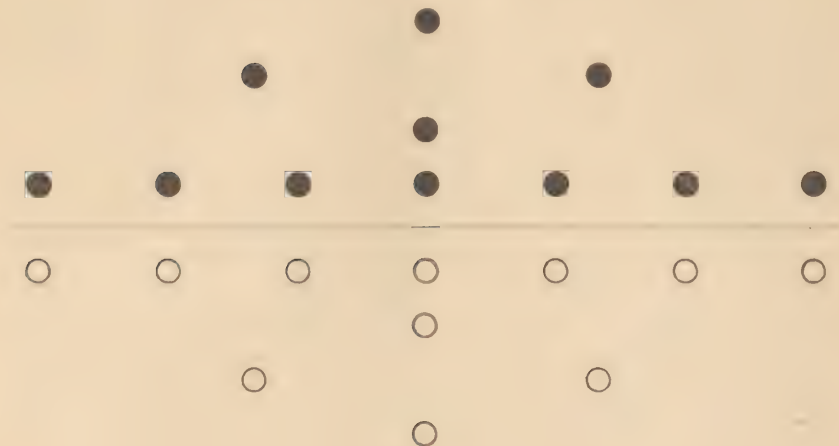
We shall therefore limit our description to a few of the best—choosing, particularly, such as may be participated in by a large number of men at once.

Besides the national game of base-ball—the rules of which are too well known to require any repetition—there are several other standard ones involving not only a considerable exercise of athletic skill, but the play of which is full of interest and healthy excitement. Among these the following may be noticed :



Touch in goal.	In goal.	Touch in goal.	Touch or bounds.	Touch or bounds.	Touch or bounds.	Touch or bounds.
Touch in goal.	Goal line.	Goal line.	Goal line.	Goal line.	Goal line.	Goal line.
Touch in goal.	Goal line.	Goal line.	Goal line.	Goal line.	Goal line.	Goal line.
Touch in goal.	Goal line.	Goal line.	Goal line.	Goal line.	Goal line.	Goal line.

## FOOT-BALL.

*Teams lined up in "Order of Battle."*

## THE AMERICAN GAME OF FOOT-BALL.

*Introductory, by Walter Camp.*

The rules of the Intercollegiate Association, as they now stand, are the product of years of careful and well-considered legislation, and they represent the work of captains and delegates from each college through a dozen years, and probably twice as many meetings. For the last few seasons the duty of proposing any alteration has devolved upon an advisory committee of graduates, and the association then approves or disapproves of the change, but there has never been any conflict of opinion between the two bodies. In the nature of an explanation added to these rules, it will perhaps be of interest to the players using them to see something of the development of the game as evidenced by these changes. The rules relating to the officers of the game have been through as interesting a series of changes as any made in the sport itself. The original rules provided that the captains should be the sole arbiters of all disputes. It is impossible to imagine what would be the eventual outcome of such a method of deciding disputes if it were employed in a championship contest of the present day. One thing is certain, and that is, that such an arrangement was questioned even at the outset, and the very first season of the sport in this country witnessed the adoption of the referee system. It is true that the captains were then expected to and did make claims, but the referee rendered decisions. The next step was the adoption of a plan allowing each side a judge, who took the

place of the captain in making claims, and who acted as an advocate in arguing the matter with the referee. The abuse of this system promised to turn the foot-ball field into a wrangling ground, where the judges occupied too large a proportion of the time and attention of every one. Judges were therefore abolished, and the referee left sole master once again. Although this was a present relief, it was by no means thoroughly satisfactory; and after a few years of it, in which it became more and more manifest that the duties were too severe for any one man, the double system was adopted, and one referee made judge of the ball and the other, or umpire as he was called, judge of the actions of players. This division of labor has greatly increased the efficiency of the rulings and rendered the game more certain in every way. The scoring has also undergone radical changes. At first goals only counted, then touch-downs, then safeties, and finally to each point was given a fixed numerical value. The rules regarding scrimmages, however, mark the chief divergence of the American game from the Rugby Union of the Englishman. The original rule stated that the ball must be placed upon the ground, and the players of the respective sides who had closed in about it should, by kicking and pushing their opponents back, endeavor to drive the ball in the direction of their opponents' goal-line. The player of the present day has little idea of the shin-kicking contest into which the old-fashioned scrimmage developed immediately the ball was put in play. The positions of quarter-back and snap-back mark the introduction of rules admitting the present snapping-back of the American game, and it is safe to say that the greater skill and precision of that method can not be equalled under the old English rules. The "block game," as it was called, was the only feature of this outlet for a "down" which promised to make the method unsatisfactory, and this was killed by the introduction of the five-yard rule. This latter has made the American game far faster than the English, and more suited, therefore, to the demands of American players and spectators. "Maul in goal," another disagreeable feature of the game as it was first played by our collegians, offered to the legislators more difficulties than almost any other of the entire code, and, after attacking the problem in various ways and from all sides, they came to the sensible conclusion that the best thing was to eliminate it and all rules bearing upon it. No one has ever felt the loss in any way but pleasantly. Off and on side were principles at first extremely difficult for men who had been accustomed to the early American game to grasp, and it was a year or two before they were thoroughly mastered. Even now we do not observe them with anything like the strictness of the Englishman, as our method of interference for the benefit of the runner sufficiently proves. Our system of penalties for the infringement of certain of the rules became necessary from the lack of any traditions respecting the game, and the system has by its growth proved a satisfactory method of dealing with infractions of all kinds. Nothing can show this more plainly than the oft-repeated phenomena of the dis-

appearance of some pet form of small rule-breaking as soon as a penalty was applied to it. Low tackling, holding an opponent when he has not the ball, striking with the fist, all these have been made the subject of special legislation, and, as soon as a sufficient penalty was attached, have become exceedingly rare. Some of the rules as they now stand represent the excision of objectionable features which are now no more than a memory. For instance, the rule regarding the use of sticky or greasy substance on the person of players was inserted to prevent the use of Venetian turpentine on the hands and lard on the canvas jackets of the contestants, both of which customs have been entirely forgotten, although common when the rule was adopted. Under the definition of "kick-out" appears another relic in the shape of the clause "and cannot score a goal." This clause was one of the original wordings, and existed in the English rules when the actual size of the field was not specified, and on minimum fields it was possible, with the assistance of the wind, to actually kick a goal from kick-out. Players of to-day are wont to think that this clause refers to a kick-out which the wind blows back, so that it goes over the goal of the parties defending the goal; but this would not score a goal in any sense, as the ball must go over the cross bar of the *opponents'* goal to score. "Waving the hat" is another clause which marks the death of a custom extremely disagreeable to halves and back. The opposing rushers, when coming down under a kick, would seize their long hats by the tassel and actually swing them before the eyes of the man attempting to catch the ball, thus rendering anything like sure catching out of the question. While one easily sees the inestimable value which this careful legislation has been to the game in this country, he has but to talk with these legislators, past and present, to find how strongly they oppose all legislation not actually demanded by abuses in the sport. The reason for this is that they have seen how far-reaching any alteration is liable to prove in its ultimate effect upon the playing, and they are therefore averse to legislating, except when it becomes absolutely necessary.

Of all college sports foot-ball has proved most attractive to the spectators. It has suffered more rebuffs at the hands of the press than any other game, but these rebuffs were attributable to ignorance of the rules and customs, and as the sport became better known the adverse criticism decreased until it has now almost disappeared. The history of the sport in England has been equally one of a series of rebuffs. As far back as 1343 Edward III objected that it distracted men from archery, and a repressive law was therefore enacted against it. Again, forty-six years later, Richard II prohibited it. Henry IV, Henry VII, and Elizabeth all assailed the pastime, and many are the writers who have set their pens most vigorously against it. Stubbs, Elyot, and Carew each had a turn at abusing foot-ball, but it is to-day one of Merrie England's best of games, and into nearly every English colony her sturdy sons have carried this sport. No game has



shown such a remarkable vitality in the face of all opposition. It has steadily increased the number of its supporters, and it has no deserters. Every convert becomes an eager advocate of its merits, and although it is only fifteen years old in America, nearly every school and college has a team, and the principal 'varsity matches draw audiences of some thirty thousand spectators. If it be not debauched by the insidious evils of money-making, if its adherents will only see to it that no taint of professionalism be allowed to creep in and destroy it from-within, its popularity is as sure as that of any sport in existence.

FOOT-BALL RULES OF THE AMERICAN INTERCOLLEGIATE ASSOCIATION.\*

RULE 1. (a) A drop-kick is made by letting the ball fall from the hands and kicking it at the very instant it rises.

(b) A place-kick is made by kicking the ball after it has been placed on the ground.

(c) A punt is made by letting the ball fall from the hands and kicking it before it touches the ground.

(d) Kick-off is a place-kick from the center of the field of play, and cannot score a goal.

(e) Kick-out is a drop-kick, or place-kick, by a player of the side which has touched the ball down in their own goal, or into whose touch-in-goal the ball has gone, and cannot score a goal.

(f) A free-kick is one where the opponents are restrained by rule.

RULE 2. (a) In touch means out of bounds.

(b) A fair is putting the ball in play from touch.

RULE 3. A foul is any violation of a rule.

RULE 4. (a) A touch-down is made when the ball is carried, kicked, or passed across the goal line and there held, either in goal or touch-in-goal.

(b) A safety is made when a player guarding his goal receives the ball from a player of his own side, either by a pass, kick, or a snap-back, and then touches it down behind his goal line, or when he himself carries the ball across his own goal line and touches it down, or when he puts the ball into his own touch-in-goal, or when the ball, being kicked by one of his own side, bounds back from an opponent across the goal line and he then touches it down.

(c) A touch-back is made when a player touches the ball to the ground behind his own goal, the impetus which sent the ball across the line having been received from an opponent.

RULE 5. A punt-out is a punt made by a player of the side which has made a touch-down in their opponents' goal to another of his own side for a fair catch.

\* These rules were also adopted by the Board of Managers of the Amateur Athletic Union, June 2, 1888. Re-approved May 13, 1890.

RULE 6. A goal may be obtained by kicking the ball in any way except a punt from the field of play (without touching the ground, or dress, or person of any player after the kick) over the cross-bar or post of opponents' goal.

RULE 7. A scrimmage takes place when the holder of the ball puts it down on the ground, and puts it in play by kicking it or snapping it back.

RULE 8. A fair catch is a catch made direct from a kick by one of the opponents, or from a punt-out by one of the same side, provided the catcher made a mark with his heel at the spot where he has made the catch, and no other of his side touch the ball. If the catcher, after making his mark, be deliberately thrown to the ground by an opponent, he shall be given five yards, unless this carries the ball across the goal line.

RULE 9. Charging is rushing forward to seize the ball or tackle a player.

RULE 10. Interference is using the hands or arms in any way to obstruct or hold a player who has not the ball, not the runner.

RULE 11. The ball is dead—

I. When the holder has cried down, or when the referee has cried down, or when the umpire has called foul.

II. When a goal has been obtained.

III. When it has gone into touch, or touch-in-goal, except for punt-out.

IV. When a touch-down or safety has been made.

V. When a fair catch has been heeled. No play can be made while the ball is dead, except to put in play by rule.

RULE 12. The grounds must be 330 feet in length and 160 feet in width, with a goal placed in the middle of each goal line, composed of two upright posts, exceeding 20 feet in height, and placed 18 feet 6 inches apart, with cross-bar 10 feet from the ground.

RULE 13. The game shall be played by teams of eleven men each; and in case of a disqualified or injured player a substitute shall take his place. Nor shall the disqualified or injured player return to further participation in the game.

RULE 14. There shall be an umpire and a referee. No man shall act as an umpire who is an alumnus of either of the competing colleges. The umpires shall be nominated and elected by the advisory committee. The referee shall be chosen by the two captains of the opposing teams in each game, except in case of disagreement, when the choice shall be referred to the advisory committee, whose decision shall be final. All the referees and umpires shall be permanently elected and assigned, on or before the third Saturday in October in each year.

RULE 15. (a) The umpire is the judge for the players, and his decision is final regarding fouls and unfair tactics.

(b) The referee is judge for the ball, and his decision is final in all points not covered by the umpire.

(c) Both umpire and referee shall use whistles to indicate cessation of play on fouls and downs. The referee shall use a stop watch in timing the game.

RULE 16. (a) The time of a game is an hour and a half, each side playing forty-five minutes from each goal. There shall be ten minutes' intermission between the two halves. The game shall be decided by the score of even halves. Either side refusing to play after ordered to by the referee, shall forfeit the game. This shall also apply to refusing to commence the game when ordered to by the referee. The referee shall notify the captains of the time remaining not more than ten nor less than five minutes from the end of each half.

(b) Time shall not be called for the end of a three-quarter until the ball is dead; and in the case of a try-at-goal from a touch-down the try shall be allowed. Time shall be taken out while the ball is being brought out either for a try, kick-out or kick-off.

RULE 17. No one wearing projecting nails or iron plates on his shoes, or any metal substance upon his person, shall be allowed to play in a match. No sticky or greasy substance shall be used on the person of players.

RULE 18. The ball goes into touch when it crosses the side line, or when the holder puts part of either foot across or on that line. The touch line is in touch and the goal line in goal.

RULE 19. The captains shall toss up before the commencement of the match, and the winner of the toss shall have his choice of goal or of kick-off. The same side shall not kick-off in two successive halves.

RULE 20. The ball shall be kicked off at the beginning of each half; and whenever a goal has been obtained the side which has lost it shall kick off.

RULE 21. A player who has made and claimed a fair catch shall take a drop-kick, or a punt, or place the ball for a place-kick. The opponents may come up to the catcher's mark, and the ball must be kicked from some spot behind that mark on a parallel to touch line.

RULE 22. The side which has a free-kick must be behind the ball when it is kicked. At kick-off the opposite side must stand at least 10 yards in front of the ball until it is kicked.

RULE 23. Charging is lawful for opponents if a punter advances beyond his line, or in case of a place-kick, immediately the ball is put in play by touching the ground. In case of a punt-out, not till ball is kicked.

RULE 24. (a) A player is put off side if, during a scrimmage, he gets in front of the ball, or if the ball has been last touched by his own side behind him. It is impossible for a player to be off side in his own goal. No player when off side shall touch the ball, or interrupt, or obstruct opponent with his hands or arms until again on side.

(b) A player being off side is put on side when the ball has touched an opponent, or when one of his own side has run in front of him, either with the ball, or having touched it when behind him.



(c) If a player when off side touches the ball inside the opponents' 5-yard line, the ball shall go as a touch-back to the opponents.

RULE 25. No player shall lay his hands upon, or interfere by use of hands or arms, with an opponent, unless he has the ball. The side which has the ball can only interfere with the body. The side which has not the ball can use the hands and arms, as heretofore.

RULE 26. (a) A foul shall be granted for intentional delay of game, off side play, or holding an opponent, unless he has the ball. No delay arising from any cause whatsoever shall continue more than five minutes.

(b) The penalty for fouls and violation of rules, except otherwise provided, shall be a down for the other side; or, if the side making the foul has not the ball, 5 yards to the opponents.

RULE 27. (a) A player shall be disqualified for unnecessary roughness, hacking or striking with closed fist.

(b) For the offenses of throttling, tripping up, or intentional tackling below the knees, the opponents shall receive 25 yards, or a free-kick, at their option. In case, however, the 25 yards would carry the ball across the goal line they can have half the distance from the spot of the offense to the goal line, and shall not be allowed a free-kick.

RULE 28. A player may throw or pass the ball in any direction except towards opponents' goal. If the ball be batted in any direction or thrown forward it shall go down on the spot to opponents.

RULE 29. If a player when off side interferes with an opponent trying for a fair catch, by touching him or the ball, or waving his hat or hands, the opponent may have a free-kick, or down, where the interference occurred.

RULE 30. (a) If a player having the ball be tackled and the ball fairly held, the man so tackling shall cry "held," the one so tackled must cry "down," and some player of his side put it down for a scrimmage. The snapper back and the man opposite him cannot pick out the ball with the hand until it touch a third man; nor can the opponents touch the ball until it is in motion. The snapper back is entitled to but half the ball. If the snapper back be off side in the act of snapping back, the ball must be snapped again, and if this occurs three times on same down, the ball goes to opponents. The man who first receives the ball when snapped back from a down, or thrown back from a fair, shall not carry the ball forward under any circumstances whatever. If, in three consecutive fairs and downs, unless the ball cross the goal line, a team shall not have advanced the ball 5 or taken it back 20 yards, it shall go to the opponents on spot of fourth. "Consecutive" means without leaving the hands of the side holding it, and by a kick giving opponents fair and equal chance of gaining possession of it.

(b) The man who puts the ball in play in a scrimmage cannot pick it up until it has touched some third man. "Third man" means any other player than the one putting the ball in play and the man opposite him.



RULE 31. If the ball goes into touch, whether it bounds back or not, a player on the side which touches it down must bring it to the spot where the line was crossed, and there either—

I. Bound the ball in the field of play, or touch it in with both hands, at right angles to the touch line, and then run with it, kick it, or throw it back; or

II. Throw it out at right angles to the touch line; or

III. Walk out with it at right angles to touch line, any distance not less than 5 nor more than 15 yards, and there put it down, first declaring how far he intends walking. The man who puts the ball in must face field or opponents' goal, and he alone can have his foot outside touch line. Any one, except him, who puts his hands or feet between the ball and his opponents' goal is off side. If it be not thrown out at right angles, either side may claim it thrown over again, and if it fail to be put in play fairly in three trials it shall go to the opponents.

RULE 32. A side which has made a touch-down in their opponents' goal *must* try at goal, either by a place-kick or a punt-out.

RULE 33. (a) If the try be by a place-kick, a player of the side which has touched the ball down shall bring it up to the goal line, and making a mark opposite the spot where it was touched down, bring it out at right angles to the goal line such distance as he thinks proper, and there place it for another of his side to kick. The opponents must remain behind their goal line until the ball has been placed on the ground.

(b) The placer in a try-at-goal may be off side or in touch without vitiating the kick.

RULE 34. If the try be by a punt-out, the punter shall bring the ball up to the goal line, and making a mark opposite the spot where it was touched down, punt-out from any spot behind line of goal and not nearer the goal post than such mark, to another of his side, who must all stand outside of goal line not less than 15 feet. If the touch-down was made in touch in goal, the punt-out shall be made from the intersection of the goal and touch lines. The opponents may line up anywhere on the goal line except space of 5 feet on each side of punter's mark, but cannot interfere with punter, nor can he touch the ball after kicking it until it touch some other player. If a fair catch be made from a punt-out, the mark shall serve to determine positions as the mark of any fair catch. If a fair catch be not made the ball shall go to the opponents at the spot where it first strikes the ground.

RULE 35. A side which has made a touch-back or a safety must kick out from not more than 25 yards outside the kicker's goal. If the ball go into touch before striking a player it must be kicked out again; and if this occurs three times in succession it shall be given to opponents as in touch on 25-yard line on side where it went out. At kick-out opponents must be on 25-yard line or nearer their own goal.

RULE 36. The following shall be the value of each point in the scoring : Goal obtained by touch-down, 6 ; goal from field kick, 5 ; touch-down failing goal, 4 ; safety by opponents, 2.

## FOOT-BALL AND THE ART OF WAR.\*

### STRATEGY AND GRAND TACTICS.

Whether it is to be regarded as a *calamity* or as a "blessing in disguise," war is the inevitable accompaniment of all human progress ; and it is equally axiomatic, from the purely military stand-point, that whatever be its particular objects, those means which promise their speediest attainment are undoubtedly the best.

The conduct of a war, however, is narrowly conditioned by the *rules* of military science, the *configurations* of the theater of operations, and the relative *resources* of the contestants. "Time" is the ruling element in each of these conditions. Hence, precise plans and energetic action (all of which presuppose thorough *preparation*) will alone suffice to secure a speedy and successful termination of hostilities ; it follows that, other things being equal, the primary effort of a nation involved in war should be to secure the military *initiative*.

The war may be offensive, offenso-defensive, defenso-offensive, or purely defensive. I have graded them according to their military advantages. The offensive principle is best, the defensive element is historically weak. With us a foreign war would have to commence as purely *defensive*, in time it might become defenso-offensive, and, if success crowned our efforts, perhaps the offensive element might at length become the prominent one. But whatever be the character of the war, the rules which will govern its plans are defined in strategy, logistics, engineering, and tactics. To define these by key-words, I may say : By means of strategy we *direct* an army, by logistics we *move* it, by engineering we *protect* it, by grand tactics we *fight* it, by minor tactics we *handle* its several "arms," and by elementary tactics we *teach* and educate its *personnel*.

Strategy is the science of campaigning ; its application is the broad art of directing armies on the whole theater of war ; its object is decisive concentration ; its theater is beyond the range of projectiles ; its problem is chiefly a mental one ; and its resources are intelligence, common sense, and executive ability. It is concerned with the *what*, the *why*, the *when*, and the *how* ; it is the science of generals, as its *root* implies ; it has to consider "zones of war," "objective" or "strategic" *points*, "lines of *operation*," "lines of *communication*," "lines of *retreat*," "bases of operation," "*depôts* of *supply*," &c., most of which terms have been so incorporated into cur-

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\* Extract from Yale Military Lectures, Regular Course, Sheffield Scientific School.

rent literature that I take it for granted most Americans understand them intuitively. At any rate, a foot-ball field contains the whole of them.

The blue\* goal is our "primary" base of operations; all others are "secondary" and "accidental." The "objective" or "strategic" point is the *crimson*\* goal. The "depot of supplies" is the blue\* pavilion, with its medicine chest, supernumeraries, material, extras, &c. The "lines of communication" are the lateral lines taken by the ball from snap back to the players. The "absolute" line of operations is from goal to goal. The secondary line of operations is from ball to goal. The accidental line of operations is determined by the play. The three zones are right, left, and center, or else those made by the "kick-out" limits. The whole theater is bounded by neutral territory; the play is governed by mimic rules of war, and all its incidents are absolute counterparts of the deadlier game of later years.

A good foot-ball player will make a good soldier, and an able captain of Yale will make an abler captain for our common *Alma Mater*.

But to return to our text: The art of war—

*Logistics* is the science of military movements, details, statistics, orders, organization, transportation, supply, installation, information, mobilization, arrangement, and in general of preparation and repairs. It comprehends marches, railroad and water transportation, trains, camps, cantonments, manufacture, purchase, distribution and supply of arms, materials, and munitions of war. Its studies belong to the general staff. It is the lieutenant of strategy, and its scope is coextensive with directorship in that it provides the means. Its theater is the actual territory involved in war, and its duties are active both in peace and war.

Military engineering is the application of the peaceful science to the conditions of war. Its duty is to supplement logistics, to make rough ways smooth, and erect artificial obstacles. The engineer has to correct the map upon the spot, and to alter its topography by every means at his command which will serve to further the prosecution of the war.

Military tactics is the science of military methods in so far as the *personnel* of armies are concerned. Its application is the art of *teaching, moving, disposing*, and *using* troops. It is divided into elementary, minor, and grand tactics, of which more anon.

Every war is composed of mobilizations, marches, encampments, battles, sieges, struggles with topography, and the erection of defenses. These several operations have to be conducted in strict accordance with the *principles* laid down in the forementioned sciences. I say *principles* rather than "rules," because unforeseen conditions are constantly modifying their application. The art of war may here draw another illustration from your

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\*In this book black lines are printed instead of "blue" and parallel lines instead of "crimson."

familiar champion game. Like it, the rules are couched to suit "set" conditions only; examples, and experience, study, and *coup d'oeil*, must supplement these on the spot.

Let us suppose for instance that your next year's games are to be played upon *rough* country instead of leveled ovals, and that each university is to select for the other two, sight unseen until the teams line up, some purposely difficult but not impracticable field. It is my opinion you would study the "art of war" in downright earnest ere the matches came off, and I doubt not you would find therein much of suggestive value even now.

But let me act for Princeton to-day, and take you in imagination to such a field where we will suppose Yale must struggle with Harvard.





HOW TOPOGRAPHY AND "ROUGH COUNTRY" WOULD INFLUENCE FOOT-BALL.

You will perceive at a glance that while the *principles* remain the same, the *conditions* have been entirely altered by *topography*, and a moment's additional consideration will convince you how noticeably similar, in all its underlying principles, this game of Rugby ball is to the rougher one of iron, whose rushers are armed with deadly steel, whose scrimmages are battles, whose fleetest flankers are on horseback, and whose only umpire is success.

Returning now to our subject : As soon as our armies are ready to take the field we must have determined the nature of the war—whether it is to be offensive or defensive, or of mixed description. The next care will be the study of the theater of war—generally, politically, strategically, critically.

You cannot but perceive the full import of this topic now that we have secured so apt a basis of illustration. Conceive our foot-ball plot to be a mile square, and now enlarge it one hundred thousand fold, we shall then have about the area of country about Philadelphia and Richmond. Let our river be the Potomac.

According to the principles of strategy, we must now fix upon our base of operations, our lines of advance, or retreat, and communication, our maneuvers, our different objects before the attainment of the main and final object, our lines of defense, our depots, and our places of refuge in case of defeat.

Strategy, logistics, and engineering will soon conduct us into the presence of the enemy. It is here, by the principles of grand tactics, that we learn how to dispose and use our own troops so as to displace and destroy those of the hostile army. Thus the prosecution of our strategical movements may force us to overcome natural and artificial difficulties which we find in our way, as, for instance, rivers, fortifications, &c. It is then that the art of engineering finds employment.

In the meantime, to arrive at one point from another, we must march in certain order, and be constantly provided with provisions and supplies ; here logistics will determine our arrangements.

There are three great maxims common to the whole science of war ; they are—

1. Concentrate your force, and act with the whole of it on one part only of the enemy's force.
2. Act against the weakest part of your enemy—his center, if he is dispersed ; his flank or rear, if concentrated. But if against his communications, do not endanger your own.
3. The plan once perfected, and the decision to act upon it taken, act at once and with the utmost speed, in order to attain the object before the enemy suspects what you are about.

Each theater of war, whatever be its form, can be divided into three zones : Right, left, and center. A choice must be made in which of the zones the operations are to take place. Circumstances may be such that one, two, or even three zones may be employed. In the first case we would have a

simple line, in the two others several lines of operation. The main point is to select the zone in which we can bring the greatest disaster to the enemy with the least risk to ourselves.

If an army is placed between two hostile ones its position is "central," and its object ought to be to defeat each of them before they can effect a junction or a combined attack. Our lines ought to be *interior* to those of the enemy; that is, we should choose them so that we can always unite our divisions before the enemy can unite his. In "defensive" operations, these lines should *converge* to our "line of defense;" in "offensive operations," they ought to *diverge* so as to separate the opposing forces.

Finally, with reference to the reciprocal relations of our own and our enemy's lines of operation, we ought, if possible, so to engage him that if defeated he will lose his line of retreat; that is, force him to fight parallel to his line of operations, if it can be done without putting ourselves into a reciprocal position. This has resulted in famous victories, and is generally practicable when we have alternate lines and bases, or when we have a sufficient superiority to risk the encounter in reciprocal relations.

The whole science of strategy is based upon the discussion of the particular cases and the combinations of these several fundamental principles.

The function of generalship is, first, to study, analyze, and compare their relative merits according to the circumstances and in the light of former military history; next, to select among them according to cool judgment; and, finally, to *make* history.

## THE COMBINED USE OF THE THREE ARMS.\*

### GRAND OR BATTLE TACTICS.

By "elementary" tactics we understand the *modus operandi* of passing from one formation to another in each of "the three arms." The books relating to this branch of military tactics are properly called "drill-books," and treat of the A-B-C conditions of maneuvering. They comprehend "manual exercises," target practice, ceremonies, and methods of distributing the "units" of a common "arm" with reference to each other. There is nothing "fixed" about them, save the "end" in view, which is to keep the means of utilizing an "arm" to the best advantage, always up to the latest improvement in its weapons, the security of simplicity, and the absolute economy of time. Most all nations have different systems of elementary tactics. So, for instance, do most athletic sports. In foot-ball they comprehend all the details, tricks, and methods of training, tackling, kicking, &c., and include the manual, and *pedual* of the ball itself. Graded above this comes *minor* tactics, which is concerned with the proper "use" of the individual arms of the service. It is essentially different for each

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\* Extract from Yale Military Lectures, Regular Course, Sheffield Scientific School.



"arm," and is likewise subject to constant modification, although its *rate* of change is slower. The "end" in view is how *best* to secure the "effective" strength of the "arm" concerned, with a *minimum* of *loss* to itself.

Hence, in solving the problems of "minor tactics," we have to consider the *counter* effect of each of the three arms, both separately and combined. In foot-ball they cover the principles governing the "use" of "rushers," "runners," and "kickers," who are the infantry, cavalry, and artillery of the "scrimmage." We have already analyzed this branch of our subject in our separate studies of the three arms. It now remains to consider their *combined* "use" or grand tactics, which Napoleon defined "*the art of being stronger*." Broadly, this is the loftiest region of tactics. It is the *border-land* between it and strategy. The object of the latter is the "conduct of a war," that of the former "the conduct of a battle." In their last analysis the principles governing each apply to both. The bond between the two is logistics, which is the "tactics of armies."

We *plan* a war according to the principles of strategy, and we *prosecute* it according to those of logistics; when we encounter hostile opposition *battles* occur—mere *incidents* in a campaign, and only important when *decisive*, in the furtherance of the strategic *end* in view. This is fully recognized in foot-ball—in a *decisive* scrimmage you gain 5 yards or more; failing this in three successive "downs" or "fairs," the ball goes to the opponent on the spot of fourth. However, even this is better, in an offensive campaign on your enemy's territory, than in a defensive one upon your own.

But in battles as well as scrimmages "grand tactics," or "combination," is the dominant subject for consideration. (Its harmony and concert depend primarily upon the minor tactics of the separate arms. Its success depends upon their consummate military orchestration. The manager of this dreadful opera must be fully conversant with artillery thorough-bass, exhaust the whole gamut of infantry, and add to the general execution that final brilliancy which can alone be secured by the dash and shock of mounted men. We want a "rush-line" as impenetrable as a massed battery of artillery, or, in the offensive, as irresistible as a line of bayonets, flaming with enthusiasm. We need brilliant "quarter-backs," or "flanking columns" of *all arms*, and a reserve or full-back, fresh to reap the results of any sort of victory, or to prevent the "consequences of defeat.")

Grand tactics includes the planning of battles, perfecting the preliminary arrangements, conducting them during their progress, and securing "the results of victory," or avoiding "the consequences of defeat." This is *par excellence* the peculiar province of generals and great captains. In it they should have exclusive command; no "committee upon the conduct of a war" should have any voice upon the battle-field, save at the nation's peril. The sphere of such a body begins and ends in the international, intercollegiate, or advisory atmosphere. They may assign the problem to be solved,



and restrict the conditions of the equation, but having once selected their representative, he must be unhampered. This was Grant's first condition when he accepted the command of the Army of the Potomac, and it is on this account that our Constitution wisely places the executive military authority in the President, although we have yet to see one take the field in person.

We cannot exhaust a topic such as this in many lectures. Therefore, all that I shall hope to accomplish in one is to formulate its *motif*, and enable you to obtain a fair idea of the underlying principles which govern the successful combination of "the three arms." They are most readily grasped by analysis and comparison.

The proper employment of an army, or a foot-ball team, is a practicable sermon on the old fable of "the body and its members." They must all conspire towards the general end, and none of them can say unto any of the rest "What have I to do with thee?"

Man is himself an army—a micro-military organization. In desperate jeopardy of life and limb, the brain is general, the lungs and belly are his staff departments, his heart gives him *morale*, his senses are his cavalry, his artillery or projectile force resides in his arms, his legs are his infantry, and his bayonets are his fists. By selection, special training, and separation into skilled groups, these human elements, armed with appropriate accessories, make up the macrocosm which we term an army. Artillery forms the skeleton of the "line of battle," infantry fills up and clothes the frame with strength of flesh and blood and muscle, cavalry lends nervous force and energy, and leadership gives it brains and enables it to act with intelligence.

Cavalry has been called "the eyes and ears of an army," infantry is the sovereign of the field, and artillery is her herald.

In infantry and cavalry, other things being equal, it is the number of individuals that gives strength; in artillery it is the number of guns. In the matter of foot-ball the comparison does not fail, although it is apparently concealed in the "elevens" or teams of equal numbers. The comparison of any two college teams will at once decide their relative strength in "the three arms," and, back of all this, stands the general strength of the university itself of which the team is the athletic "leven."

Cavalry is essentially an offensive arm, and has little defensive power; it has no passive strength at all. This is particularly the case of "heavy" cavalry, or "cavalry of the line of battle." *Shock* is its weapon and speed its projectile force. Whether attacking or attacked, it must ride and ride hard to meet the brunt—so must the runner who has got the ball. "Light" cavalry, however, is armed with a fire-arm, and has a certain degree of this *defenso*-offensive force, but as it is almost useless *upon horseback*, at a distance we may ignore it. But in "mounted infantry" we find the link uniting the two most important "arms;" it can act by shock, or by distant

fire, or by both, and this either offensively or defensively. As you will recall, we have already pointed out that the modern tendency of "the three arms" is "*all of them to ride upon horses.*" This is but the statement of a foot-ball platitude; for other things being equal, a "strong team" is a "mounted" team—an "all round" team of solid general players.

Artillery is mainly a defensive and destructive arm. It is most effective in masses, and as they grow its gains in offensive power. It is the bulwark of battle, and must never yield an inch when on the defensive. It is also an essential part of the offensive's rush-line, where it must gain every inch possible. For although its chief sphere of action is the distant or indirect combat, and it can hardly be said to charge as did the ancient chariots, nevertheless it does rush to the distant front, and "line up" at the very dawn of combat, and in modern days it must go forward into the gap made by its own projectiles, and carry the ball with it. But when "limbered up" artillery is powerless to "tackle," and when maneuvering under fire its status is "off-side," and more critical than any other "arm." Finally, artillery must face the enemy; it has no flank defense, if you *box its ears* you paralyze it.

In infantry we have an ideal "arm." It has the power of keeping an enemy at a distance by its fire, or of seeking him at close quarters and driving him from his position by the bayonet. Thus it is both an offensive and a defensive "arm," and this in every sense, for it can fight both offensively and defensively by its fire, and be employed both offensively and defensively in the charge. Its most natural use is the utilization of each of these characteristics. Offensively we advance our infantry, open its fire, concentrate it, and push it to the bayonet. Defensively we wait for the onset, check it with lead, and finally advance to meet it with cold steel.

The strength of a chain is located in its weakest link, and the rapidity of an army is limited by the rate of its slowest "arm." In all strategic and grand tactical combinations, therefore, in which concentration depends upon *time* elements, the essential characteristics that govern the individual movements of "the three arms" must be carefully balanced and harmonized. The key to this combination of *movement* is the recollection that an army advances on *foot*, on *horseback*, and on *wheels*. The relative rates of these methods must be adjusted to the common object, "decisive concentration at the opportune moment."

As a general rule, infantry sets the pace, and the other "arms" are delayed for its sake. But in long and arduous undertakings the case is reversed, and infantry, which has the maximum of "staying power," is more or less delayed for the sake of the remaining "arms." The object of a combined march is to reach the "strategic point" together and act unitedly. Over and above the relative consideration of foot, horseback, and wheels, we must never forget to add 25 to 30 per cent. to map distances, in order to allow for sinuosities of the route not expressed upon the map.

In successive *battle-field* action, rates and commencement of movement are regulated by orders, but generally depend upon ocular testimony as to the moment of initiation. For instance, infantry having struggled to the final zone, knows intuitively when to charge, by noticing the success of artillery preparation, and cavalry knows when to pursue by noticing the success of infantry. In the broader domain of campaigning and running into grand tactics at the threshold of the battle-field, the various columns, armies, and "arms" must adhere strictly to literal orders calculated upon approved tables of statistics and logistics.

Mixed troops move *en route* about 2 miles an hour; they can accomplish 3 if "pressed," and for a limited time 5 if "forced." In a day about the following distances can be counted upon: Route march, 12 to 15 miles; rapid march, 18 to 20 miles; and forced march, 25 to 30 miles. Exceptions do not prove the rule in this case, for it is one thing to push forward to the assistance of troops already in action, and quite a different and a dangerous one to outstrip companion arms in drumming up the foe.

Separately, infantry makes about 60 yards a minute. Work this up on the old arithmetical table of "time," and you have a fair basis of estimate. It may rise easily to 90 yards, and spurt for a minute or so, perhaps, at 120. It can charge for about 180 yards. Its relative rates are about as 1, 2, and 3 upon the yard-second basis. Its ordinary marching rates are "route," "rapid," and "forced," and may be graded *per hour* as 2, 3, and 4 miles; *per day* as 12, 24, and 36 miles.

As a fundamental basis of combination, you may rank cavalry rates as double that of infantry. *Per minute*, 120 yards, 360 yards, and 720 yards; *per hour*, 3 miles, 6 miles, and 10 miles; *per day*, 10, 25, and 40 miles.

Artillery partakes of the time characteristics of the other two "arms" according as it is horse (or light) or foot (or, by a military "bull," "mounted"). Its rates, which you may therefore combine in pairs, are: *Per minute*, 60, 120, and 360 (700, charge) yards; *per hour*, 3, 6, and 12 miles; and *per day*, 12, 24, and 36 miles.

Heavy or siege artillery is strictly in the "train," and follows an army. So do pontoons, except equipage of the light or advanced guard descriptions.

Of course an army cannot, *safely*, be many days in advance of its trains; these are its real *impedimenta*. Nevertheless, we are far more independent than former generations in this respect, and may almost carry our logistics "*canned*." Generally speaking, the strength of an army depends upon its numbers, the relative proportions of its arms, the confidence of the troops in their leaders, and the characteristics of the men who compose it; *i. e.*, their morals, discipline, preparation or training, weapons and organization.

In treating of "the three arms" separately we have already considered their proportions in an army. These, however, vary much in different nations, and within the same nation may change from their maxima to their minima according to the nature, warning, length, and object of the war;



the armament of the opposing belligerent ; and, particularly, with the character of the country in which the war is to take place. Within all these conditions it thus becomes one of the principal studies of generalship to select such ground for campaigns and battles as will enable the best use to be made of that arm in which we find ourselves superior, or in which a deficient "arm" can best be spared. When the normal proportions are present—based upon a "combined unit," which we may consider as 1 brigade of infantry (4,000), 1 regiment of cavalry (1,000), and 1 battalion of artillery (18 to 24 guns)—the field of battle will determine their most judicious distribution. The topography must be occupied with special regard to the tactical requirements of each "arm." In this respect infantry is the most independent of the "arms." It can surmount, in advance or retreat, any difficulty which the roads or configuration of the country may oppose. It can fight on every description of terrain, and can make use of all sorts of cover, or do without any.

Relatively speaking, mountainous country is impracticable for cavalry and difficult for artillery. In such regions infantry increases in relative value. But determination can conquer all obstacles. Hannibal led his elephants across the Alps and Napoleon drew his artillery across them. Grant put cannon in a church steeple.

Generally speaking, too small a quantity of artillery is dangerous. We must at least have enough to occupy and neutralize the hostile batteries. Above this, every extra gun is an element of preponderance, and counts heavily in the "chances of success." *Per converse*, with too little artillery, our own infantry will be too much exposed to the combined fire of hostile infantry and artillery, and demoralization is almost certain. The moral power of artillery is not the least element of its strength upon the field of battle, and, with *new* troops, a strong display of this "arm" is a great advantage. Too small a proportion of cavalry restricts us into narrow limits, prevents thorough reconnoissance, which is half the battle, and deprives us of the only means of turning a defeated enemy into a routed one.

So far as battle is concerned, large plains are best suited for the action of masses of cavalry and artillery, hilly country for light artillery and mounted infantry, and covered ground for infantry and sharpshooters. Thus, although topographical considerations are not the final determinants in the problem of grand tactics, they afford constant opportunities and necessities for modifying the combined use of the three arms. Their importance vastly increases in defensive operations, and the fundamental principle to be observed is so to occupy a position as to make the zone of attack difficult, and that of the *counter* attack practicable. Engineering, in its elementary features, comes into play here as a valuable adjunct to grand tactics, and is concerned particularly in the erection and demolition of obstacles. Upon the battle-field every soldier now-a-days is an engineer, and his inseparable weapon is the spade. All of these things being duly correlated

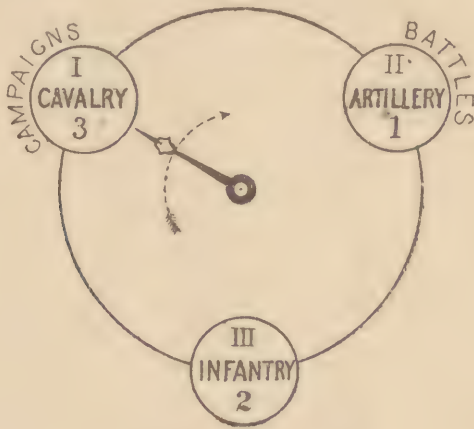


and fixed, "the battle," as the ancients called the whole array, is set in order, and the combat may now open.

Artillery prepares the victory, infantry achieves it, and cavalry completes and secures its fruits.

Infantry and artillery are pre-eminently "sister arms;" they work in concert throughout an action. Cavalry is more of an occasional arm.

As infantry follows up the advantage gained by artillery, it is called its "*complementary*" arm. For a similar reason cavalry is the complementary arm of infantry. Let me illustrate this complementary use of the three arms by a *working diagram*, in which they are severally arranged, at the vertices of an equilateral triangle, inscribed in a circle.



COMPLEMENTARY ARMS.

From this figure you may tell at a glance which "arm" is complementary to the others. Wind it up and let the hand go as in a watch, it will point to an "arm" first, and then its complements, one after the other.

In campaigning we start with cavalry, which must *find* the enemy, and end with cavalry, which must rout him when defeated. In battle we start with artillery, which must challenge the foe to mortal combat, and end with artillery, which must hold the field when won. The order of precedence runs with the figures.

The conditions of modern warfare require that an attack by one arm shall be *supported* by another. This support may complement, *i. e.*, succeed, or else be contemporaneous therewith. In the first case we have the full realization of the arrangement in the diagram; in the second case the complementary action is in effect the same. For instance, from our previous study it is clear that an attack with artillery alone would be resultless, hence we complement it with infantry, but the general onset is so ordered as not to anticipate the full work of artillery preparation. In the mean time it is a settled principle that cavalry should always support an attack upon the

enemy's front. This forces our cavalry to the flank, so as to descend thereon with or after the infantry. It is even held that a combination of infantry and cavalry ought to succeed against a superior force of infantry. The attack must dispose itself upon similar principles, *i. e.*, the infantry making the main or front attack, while the cavalry comes in, opportunely, upon the flank.

To defeat good infantry in a fair position, a combination of artillery and infantry is now regarded as an absolute necessity. The artillery plays the usual role of preparing the attack, and the advancing infantry closes at the decisive moment. The principles of complementary action come out still more plainly when we consider the case of mounted troops. Experience proves that cavalry charges are indecisive (except cavalry against cavalry) unless supported by infantry. Thus Napoleon's cavalry at Waterloo failed for want of this support. The Prussian cavalry at Vionville failed for a similar reason. At Austerlitz Kellerman's cavalry was defeated by the Russian horse, *but* it rallied between the lines of friendly infantry, and, after the latter had disordered the Russians, Kellerman sallied out again and routed them. Nevertheless, while good infantry is thus supposed to be superior to cavalry alone, and under all circumstances, still cavalry combined with sufficient artillery, instead of infantry, has a fair chance of success. The principle of complementary action still holds; that is, the cavalry is to maneuver on the flanks and line of retreat, and by threatening a charge, force the infantry into squares, columns, maneuvers, or confusion. The artillery now increases its primary efforts and plays upon these, and when broken and demoralized the cavalry is to charge. Where two arms are alone considered they are complements to each other in succession, but the main idea shown in the diagram dominates.

But these are all special cases. The fundamental facts are properly fixed when we bear in mind that both cavalry and artillery are "secondary" arms, and that infantry alone is the sovereign fighting one. The best results can alone be obtained when the two are fully subordinated to the action of the latter. In general engagements this subordination becomes more and more necessary, while in simple combats, where only one or two "arms" are involved, this precedence must be settled by the complementary character of the "effects" which they produce.

You may perhaps apply this idea of complementary action to the grand tactics of the foot-ball field, as between its rushers, runners, and kickers, and from the study of the whole subject solve not a few common problems. The fact is, I believe it will pay your captains to familiarize themselves with *military strategy and tactics*, pure and simple; these games are as near alike as the pastimes of peace and war can possibly become, and they mutually illustrate each other. At any rate, right sure am I, that, whether the study of the art of war will shed light or not, upon that of foot-ball, the

experience gained in the latter is the very best school there is preparatory to the intellectual part of the former.

### FOOT-BALL AND THE BATTLE-FIELD.\*

MILITARY GEOMETRY, OR THE TWELVE ORDERS OF BATTLE ILLUSTRATED.

If an army were always drawn up in the same manner it would certainly be defeated by another whose positions were changed to suit varying circumstances. There is no invariable order of battle, it will always depend upon the locality; that is, principally upon topography. Victories are only *decisive* when an enemy is "turned" or "broken;" hence the selection of the *points* of attack is of primary importance, the "order" of battle, and its particular plan, being secondary, or an after consideration.

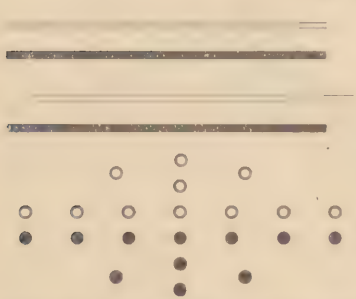
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An "order" of battle differs from a "line" of battle. The latter term signifies some habitual system in which the "units" are tactically drawn up and is entirely subordinate to the broader questions of battle maneuver. There are generally two or more "lines" of battle properly so-called, but only one "order." Thus a foot-ball team is "lined up" in an "order" of battle—the "rushers" are the first "line" of battle, the "half backs" are a second, the "full back" is a "reserve" or third line. These are all "elements" of the belt or zone of action, which stretches from one flank of an army to the other.

Military writers lay down twelve distinct "orders" of battle, the study of which may be of double interest to you as still further illustrative of foot-ball "grand tactics."

\*                      \*                      \*                      \*                      \*

#### 1. *The simple parallel order.*



In this order there is no particular reinforcement on any point. The whole force is drawn up equally along the front, and where both parties resort to it no particular *tactical* skill is required by either. There is no science in it, and a victory is a complete success, or a defeat equally decisive. Other things being equal, the "chances" are equal, the battle long, wavering, indecisive, until at length it is decided by mere physical strength and moral endurance. Strictly speaking,

\* Extract from Yale Military Lectures. Course before the Sheffield Scientific School. Class of '90 and '91. For authorities *vide* Mercur, Hamley, Halleck, Dufour, Schalk, &c., to whom liberal credit is given.—C. A. L. T.

this "order" can rarely occur, and even upon the foot-ball ground, where it is exactly depicted, the semblance is misleading.

The simple *parallel* "order," in its absolute, *logical*, and final analysis, requires that the two contestants shall not only be equally strong, all along the line, but shall be disposed in straight parallel contrast. That is, there is *no* contrast. No two college teams ever met upon such a basis, and certainly no two armies, even in ancient days, have thus joined battle.

Coming back, however, to the simple matter of *straight* lines, and *parallelism*, most ancient armies used this "order," and it gives us the primitive method of the "art of war." It is apparently your foot-ball method.

From the military stand-point, the victory belongs at the outset to the stronger party. Hence a positive superiority in "arms" and "troops," man to man, may excuse the semblance of its employment upon modern fields. Topography requires for such an order a broad, unvaried terrain, or else an absolute pairing off of advantages. It is generally considered to be the worst possible disposition, and so it is within the limitations and conditions we have enumerated. It is clear that you cannot outflank your enemy without being outflanked yourself, &c.

There is one occasion, however, where a straight line of solid strength may be advantageously adopted, and when perhaps it will be obligatory. That is after we have gained the strategical victory, and are already in the enemy's military rear, cutting off his line of retreat, and either protecting our own, or having an alternate line of resort. We might then have no reason to reinforce any one part. But in such a case we would be obliged to have very strong reserves, and they would really represent a reinforcement of the center, or of the point threatened by the enemy. It is to be noted here that the principle remains the same, and that the decisive maneuver has been effected before the battle.

Two foot-ball teams "lined up" just before a scrimmage (the ball not having been put into play) illustrate the geometry of this order, as shown by the figure; but in the very instant succeeding the "snap back" the whole matter alters, and, according to whatever preconceived plan may have been adopted, any one of the higher "orders" of battle may result.

The transition period is governed by *stragem*—you call it "trick"—and in the next your real order of battle develops, both for the offensive who have the ball and for the defensive who have not. This leads me to the important fact that a battle may witness a transition from the original "order" to another, and that this latter may be a very essential feature of the plan.

For instance, you "back the center." This gives us an example of the parallel order reinforced in the center. Or you attempt to run around the



end; to do it you reinforce your own end by both half backs and send the full back around with the ball. This is the parallel reinforced on the flank.

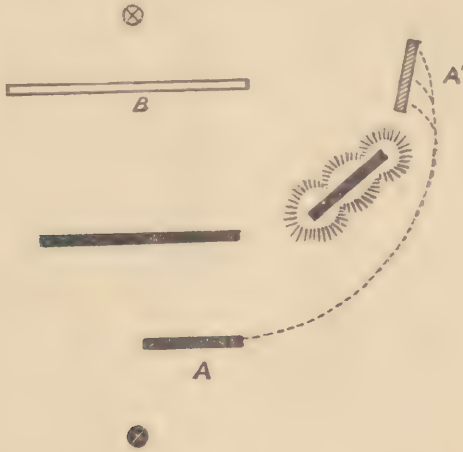


BUCKING THE LINE.

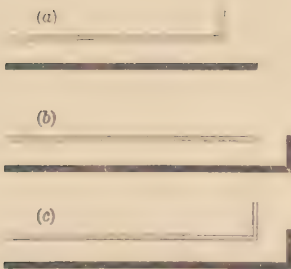


RUNNING AROUND THE END.

Here we have it in a military diagram. The battle *begins*, A moves to A', and the battle *ends*, for B must retreat:



## 2. Parallel order with a crotchet.



This is a good "order" under favorable topographical conditions. The figures show the three cases. It is sometimes used in the defensive, sometimes in the offensive, and sometimes by both. The fact is, an original defensive "order" with a crotchet tends to *beget* a corresponding offensive one, and *vice versa*. The order does not obtain in a foot-ball "line up," but its similitude may result when, the ball being "in play,"

an effort is made to send it around by the flank, and at the same time the right "end" can effect an offensive crotchet. In operation this is in effect a "turning" or out-flanking movement.

The crotchet necessitates an "elbow" to the *defense*, and the "offering of a flank" or, really, "a perpendicular" by the assailant. These are dangerous in battle. They are exposed to an effective concentration of fire. If the two branches are equal, the defensive line becomes the "wedge" order, but of a negative character, and the offensive the "inverted wedge." The "wedge" is essentially, however, an *offensive* order, as an army would only adopt this formation with the intention



of making an attack to pierce the opposing line. In the defense it is resorted to in order to prevent a flank from being enveloped. The same may be said of the "inverted wedge," but in a contrary sense. As this order would be used when we wished to yield in the center to an enemy advancing thereon, in order to envelop his wings, it is a defenso-offensive order: the crotchet to the front being offensive.

*Examples:* Malplaquet and Nordlingen are examples of simple crotchets. *Prague* is a famous example of the danger of a defensive crotchet if properly attacked. *Kolin* is an example. At Waterloo Wellington had a retired crotchet on his right flank, and, so far as parallelism went, Napoleon countered it by throwing a crotchet forward on his left flank.

History describes a famous ancient example where two armies were formed, the one like a "wedge" and the other as an "inverted wedge." It was the battle of Caslin, fought in 533 A. D., between the Franks and Romans, near Capua. The Franks were drawn up between two woods. They reinforced their centre and formed a real "wedge." The Romans were less numerous and adopted an order of less depth but more extended, forming an "inverted wedge." They gave ground in the center and made their principal attack against the wings of the Franks. The Roman cavalry, in the meantime, attacked the Franks



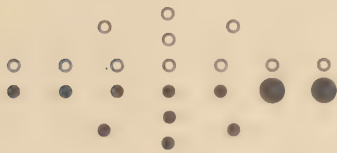
in rear by passing around one of the woods. The front of the Frank wedge continued to advance, reached the Roman camp, and became involved in pillage, which led to their defeat. The victory of the Romans was complete.

You will recognize the "order" at once, as it is a familiar one upon the "oval."

### 3. The parallel order.—Wing reinforced.



This order is in accord with correct principles, and may in certain cases secure the victory. But it has many inconveniences where the contestants are about equal, as the weakened part, being *too near* the enemy, may become seriously engaged and runs a risk of being defeated, and thus counterbalancing the success of the stronger part. Moreover the stronger part may not be able to profit by its success, and take the hostile line in flank or rear without endangering its *connection* with the rest of the line.

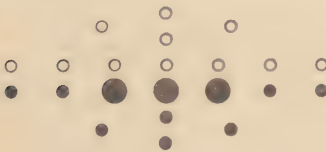
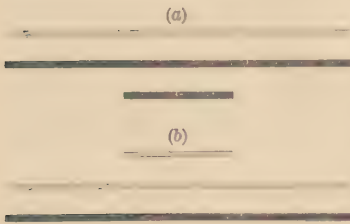


Therefore it may be laid down as a principle that when two parties are about equal and either one weakens a part of his line to reinforce his wing, he will compromise his own safety *if the rest of his line* is placed *parallel* to the enemy. Napoleon saw this error at Austerlitz in time to take deadly advantage of it. He made many personal reconnoissances, and always to good effect.

However, in *foot-ball* the forces are always *numerically* equal, and this "order" only obtains when a strong line has its heaviest men upon the flank or end, with a view to *rushing* with it, while the ball is sent around the same way.

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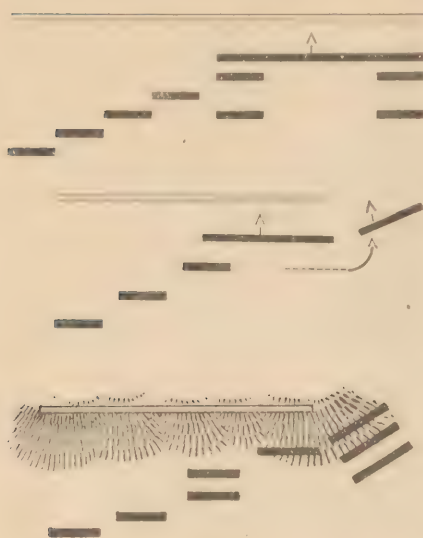
### 4. The parallel order.—Center reinforced.



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The same remarks apply as in the preceding order. It is generally in accord with correct principles, but when the contestants are about equal, the weaker parts are too near. When, however, either party is superior in numbers, it may be advantageously employed. In foot-ball we find it when heavy men are placed in the center and when "*the wedge*" is to be resorted to. Thus, while the simple parallel order has many objectionable features, the *reinforced* parallel orders compensate for them, more or less.

12. *Combined order of battle.—Attack on center and one flank.*



This is the best and most reasonable method of attacking a strong and contiguous line of battle. It was successfully employed by Napoleon at Wagram and Ligny, and was partially successful at Borodino. It was also Napoleon's plan at Waterloo, where he was eventually defeated by fate and strategic circumstances.

Of course, its adoption presupposes a very decided superiority in numbers for the assailant. This condition, however, is almost a necessity of successful modern warfare, since defensive dispositions due to topography, and hasty intrenchments, render the attack of a force by an equal one almost hopeless in the face of modern arms.

The attack upon the center, aided by a wing reinforced so as ultimately to outflank the enemy, prevents the defense from falling upon the assailant and taking him reciprocally in flank, for the enemy's wing, which is hemmed in between the two attacks, having to contend with nearly the entire opposing

force, will be defeated and probably destroyed. The remaining wing is at the same time effectually "held." In foot-ball this order is represented by strong, heavy rushers along the line from center to flank, into which the "half" and "full" backs rush. It enables a flank "wedge" to be formed, and the ball to go with it, or else, better, to escape in due time around the flank and seek the goal;

or, finally, it successfully "holds" the selected flank while the ball is being carried around it.

It is manifest that both in war and foot-ball the offensive *motif*, which leads to a "plan" or "order" of battle, depends considerably upon the *zone* of the field in which the teams "line up." In war we may dispose our teams anew in each battle. I don't think you do in foot-ball. It might be advantageous to "line up" differently upon each rush-line. It would certainly confuse the opponents, and with a strong general team would be





practicable. However, the essential difference between war and foot-ball is the element of *topography*, and, next in importance, the independence of the general as to restrictions. Finally, the question of numbers is a powerful one—the more the better in battle. Nevertheless, the principles are all in the game of foot-ball.

\* \* \* \* \*

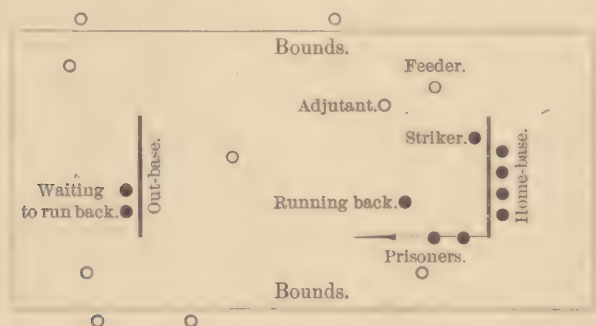
From our brief review of battle or grand tactics you may now perceive how similar the principles are to those governing your own champion game, and it must be axiomatic that they mutually illuminate each other. That foot-ball inculcates the habit of fearlessness is patent, and that the best fighting material of an army may sharpen the edge of its experience and increase its reserve of scientific forethought by a thorough mastery of the principles of this rough but grand and soldierly game, is already appreciated in the Army.

This is a result which we of the military profession owe to *your* captains who, like Camp and McClung, have codified your rules and taught us how to use them. It now only remains for you to study some of the rules and applications which *our* captains have used upon the battle-field in order to reap not only the full advantage from the pastime, but to realize in it an actual school of war.

### CLUB-BALL.

[The game is thus named in Strutt's Pastimes. Recent publications refer to it as ball-stick, and derive it from the German ball-stock.

Having chosen sides and tossed up for innings, the winning party occupies the home-base. The out-party station themselves over the play-ground, as indicated on our diagram, where the home-party is shown thus, ●; the out-party thus, ○. The captain or best man of the out-party acts



as "feeder," the next best thrower is stationed behind the prisoners, and a less prominent but active member of the party acts as adjutant, taking up his place close to the feeder. It is his duty to hand rejected balls and "tips" to the feeder, thus enabling the latter to keep an eye always upon

the prisoners. The bases are from 20 to 40 yards apart, and they are most conveniently made with painters' poles, 20 to 30 feet long. The bounds, beyond which the members of the home-party are not allowed to run, can be marked off with a few flags. The ball is about as thick as a fist; a tennis-ball, covered with a netting of stout string, answers very well. The club is 3 feet long, 2 inches wide at the top, and provided with a convenient handle. We will now describe the manner of playing.

The first man of the home-party steps in front of the base and takes up the club. The feeder throws up the ball about 10 feet high, and in the direction of the striker, who may refuse to strike unless the ball is thrown up properly. If he hits the ball he may endeavor to run to the out-base, if not, he proceeds by the shortest way to the prison. He must stop there, keeping one foot in contact with the base until a chance occurs for running to the out-base. The second man of the home-party then takes up the club. If he also misses he joins his comrade in prison taking up his place inside of him. Prisoners must hold each other by the hands and the prisoner nearest the home must keep one foot in contact with it. As soon as a chance occurs the prisoners run to the out-base and back again to the home-base. It happens occasionally that the entire home-party, with the exception of one man, is either in prison or at the out-base. In such a case one or two of the best runners must risk returning home, even if the ball should not be struck. They start the moment the "feeder" has thrown up the ball. Any member of the out-party can throw at a man running from base to base, but as a rule they should return the ball to the feeder as quickly as possible.

The following is a set of rules :

1. The club or stick shall be 3 feet long,  $\frac{1}{2}$  inch thick, and 2 inches wide at the bottom. Each side shall be at liberty to provide its own clubs, and the same club must be used throughout the game.
2. The ball used shall be an ordinary tennis ball, covered with a netting of stout twine.
3. The bases shall be 40 yards apart, the bounds 20 yards.
4. The feeder shall take his position 3 yards from the striker. He must throw up the ball about 10 feet high, and in such a manner that the striker may strike it conveniently.
5. The striker shall be at liberty to refuse two balls, whether they be thrown fairly or not, but he cannot refuse the third ball, if thrown fairly in the opinion of the judge.
6. The men of the in-party shall strike the ball in the following order : First, the man through whom they won their innings, then the feeder, and then the rest, in any order they may fix upon. But after all have struck once, they shall strike in the order in which they return from the out-base.
7. The in-party loses its innings in the following cases :
  - i. If the ball is caught from the club by one of the out-party.

ii. If a member of the in-party is hit with the ball whilst not in contact with one of the bases, except when proceeding from the strike to prison.

iii. If the ball is in the hands of the feeder without a member of the in-party being ready with the club to strike it.

iv. If the ball is touched with the fingers by one of the in-party.

v. If the striker throws the club behind the base, or takes it away with him, instead of putting it down gently.

vi. If one of the in-party passes beyond bounds.

8. One point is allowed every time the ball is hit with the club. One hundred points (or the highest number of points in three innings) decide a match. ]—*Handbook of Gymnastics and Athletics*.

### PUSH-BALL.

[The ball is about 12 inches diameter, covered with strong leather, and weighs from 8 to 10 pounds. The homes are at least 30 yards apart. It is the object of each party to send the ball into the home of the other.

The captains toss up for the first throw. The ball must be thrown with both hands raised above the shoulder, and it must leave the hands at an ascending angle. A run is permitted. The opposite party seek to stop the progress of the ball by pushing it back, with hands raised above the head. If they catch the ball, or throw it back with hands lower than the shoulders, then the ball is considered to have touched the ground at the spot where it was caught or stopped in this irregular manner. The umpires should each carry a stick to indicate the spot where the ball touched the ground and from which it is to be thrown, and the thrower is not permitted to step beyond this stick. Our diagram shows the positions of the players.



The following is a set of rules :

1. The ball to be of leather stuffed with wool, and not to exceed 8 pounds in weight. The homes to be 60 yards apart, the bounds 20 yards.

2. The first throw to be decided by lot, and to be delivered from a spot 3 yards from the middle of the play-ground, in the direction of the home of the party throwing.

3. The ball must be thrown with hands raised above the shoulders, and at an ascending angle. If thrown in defiance of this rule, or beyond bounds,

the other side shall be entitled to demand that it be thrown again and from the same spot.

4. If the thrower steps beyond the spot marked on the ground by the umpire, the other side may demand that the ball be thrown again.

5. The ball must be stopped and pushed back with hands raised above the shoulders, and the man who first touched it throws it from the spot where it first touched the ground.

6. If caught or thrown back with hands lower than the shoulders, the ball shall be considered to have touched the ground at the spot where it was caught or stopped in this irregular manner. The same rule applies to carrying or "butting" with the shoulder.

7. Each party to number ten men and a captain. Sides are changed after each game.

8. Three games out of five to decide a match.

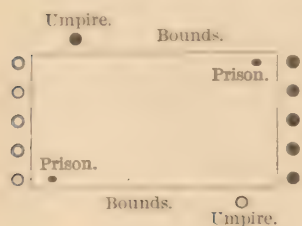
9. There shall be one judge, whose decision is final, or a judge to each side, and a referee.]—*Handbook of Gymnastics and Athletics*.

### PRISON-BARS.

[This game is described in "Strutt's Pastimes." It is played differently in various parts of the country. The rules, which we give, appear to coincide with those in force in Strutt's time. They are observed also in Germany, where the game is known as *Barlaufen*.

The homes are 40 yards apart. Each party takes possession of one of the homes. The prisons are indicated by a flag-staff placed 3 yards in front of each home, as shown in the diagram. The number of players may vary from ten to fifty to each side.

The game is opened by a challenge on the part of the leader who had the first choice. He proceeds to the other home and selects one



of the men. The man selected must hold out his hand; the challenger gives him three taps, quick or slow, as he thinks best, and starts back for his own home, the man challenged, and he alone, starting in pursuit. The party of the challenger may send one or more to the rescue, and it is a rule throughout the game that the man latest from his home "bars" all those out before him; that is, he can take any one of them prisoner if he overtakes him, but cannot be made prisoner himself. The challenge is repeated every time a prisoner is made or liberated, but in these cases the captor or the liberator challenges, and not the captain. If a prisoner is made the umpire calls out "Stop," when all players return to their homes. The prisoner is taken to prison. He stands astride, touching with one foot the stake or staff marking the prison, the other leg being astride, and the hand extended towards his own party. If a second prisoner is made he is placed inside



the first. The prisoners must join hands. The prisoners are liberated if one of them is touched by a member of their own party before the latter is struck by one of the guards set to watch the prisoners. The rescue of prisoners forms one of the most exciting parts of the game. Some of the best men should be set to watch them, and they must keep a careful watch and run out in turns. Each man can run out, as a matter of course, but too many should not run out at a time, in order that an efficient reserve may always be in the home. Much depends on the captain's judgment in placing and sending out his best runners. When the ground is free of players, one party sends out a "decoy" to entice men of the other party to leave their home; good runners should always be ready to come to the rescue of the decoys.

The following are the rules of the game :

1. The homes to be 40 yards apart and 15 yards long; a prison, marked by a flag, to be 3 yards in front of each home, and at opposite corners of the play-ground.
2. Each game is opened by a challenge on the part of the captain who had the first choice.
3. The challenge is repeated every time a prisoner is taken or liberated, but in these cases by the captor or the liberator.
4. The challenger can be pursued only by the man challenged, but his own party may send men to the rescue.
5. Any man touched by a man of the other party, who left his home later than he did, is a prisoner.
6. The game stops as soon as a prisoner is taken, until the captor has challenged; and the same rule is observed after a prisoner has been liberated. Two prisoners cannot thus be made in succession.
7. Any man running beyond bounds is a prisoner.
8. If any one reaches the home of the other party without being touched, he is allowed to return to his own home outside the bounds.
9. As long as there is only one prisoner he must touch the stake marking the prison with one foot. If there are several prisoners they must join hands, the one last taken touching the stake with one foot.
10. The prisoner or prisoners are liberated and free to return to their home if one of them is touched by one of their own party, without the intending liberator being touched himself.
11. If one of the prisoners leaves his place previous to being touched in this manner, then they are not liberated; nor is their intending liberator to be taken prisoner, unless touched before he reached them.
12. Each game to be over and sides to be changed when there are three prisoners (or four, when there are over fifteen players to each side).
13. The decisions of the umpires to be final.]—*Handbook of Gymnastics and Athletics.*

## HARE AND HOUNDS.

[This is a game for the open country. One player is *hare*. He is provided with a bag full of small pieces of paper, one of which he drops every ten paces. This is the scent. Another player is *huntsman*, a third *whipper-in*, and the rest are hounds. The whipper-in is furnished with a red flag, and the huntsman carries a white flag. The hare is allowed a start of five or ten minutes, when the others go in pursuit. The huntsman comes first, followed by the hounds, and the whipper-in brings up the rear. They all walk or run in single file. If the huntsman loses the scent he calls out "Lost!" The whipper-in then stations himself with his flag at the place where the last piece of paper was found, and the rest wheel round in a circle, keeping in line, when one of them is sure to recover the scent. The huntsman then sounds his horn, and the chase is continued over fields, hedges, and ditches. At last the hare is in sight. The huntsman encourages his followers to fresh efforts, but the hare, after all, may evade his pursuers and reach home before them. The hounds are not allowed to make short cuts, but must follow the scent as indicated by the slips of paper. After such a hot game it is advisable to walk about for some time, and to change clothes in a warm room.]—*Handbook of Gymnastics and Athletics*.

## THE COCK FIGHT.

[Each side station themselves in their home. On a signal, by the umpire, they all leave their homes, and, hopping on one foot, they approach each other. Arms are folded on the chest, and each player then rushes at one of the antagonists and endeavors to force him to put down his leg. Any one putting down his leg is "dead," and must join the umpire, who, after the *melée* has lasted some time, gives the signal to retire. Each side then returns to its home; but, having rested a short time, the players again sally forth, this time hopping on the other leg. The game is continued until all the men of one side are dead.]—*Handbook of Gymnastics and Athletics*.

To entitle a performance to a place in the athletic "records" of this association, the following certificate must be affixed to the record and be signed by at least three of the "officers of the tournament" who were witnesses thereof:

"We, the undersigned, hereby affirm that the foregoing record is correct, and that we were official witnesses to its accomplishment in a public tournament held at ———, under the rules of the American Army Athletic Association, and open to officers and men belonging to ———, U. S. Army."

- |                     |          |             |
|---------------------|----------|-------------|
| 1. ———, U. S. Army. | } Judge. |             |
| 2. ———, " "         |          | } Measurer. |
| 3. ———, " "         |          |             |

## SOME OF THE BEST ATHLETIC PERFORMANCES ON RECORD.

(Amateur performances are designated by a \*; professional, by a †. A. stands for American (U. S.); A. I. for American Intercollegiate (U. S.); C. for Canadian; E. for English; S. for Scottish; I. for Irish.)

The following may serve as standards of excellence until beaten :

### WALKING.

*1 mile.*—6 min. 23 sec., W. Perkins, E.†, 1874. 6 min. 29 $\frac{2}{3}$  sec., F. P. Murray, A.\*, 1883. 7 min. 6 $\frac{1}{3}$  sec., T. McIlvaine (Columbia), A. I.\*, 1889.

*3 miles.*—20 min. 21 $\frac{1}{2}$  sec., J. W. Raby, E.†, 1883. 21 min. 11 $\frac{1}{2}$  sec., John Meagher, A.†, 1882. 21 min. 9 $\frac{1}{3}$  sec., F. P. Murray, A.\*, 1883.

### RUNNING.

*100 yards.*—9 $\frac{1}{4}$  sec., George Seward, of U. S., in E.,†, 1844. 9 $\frac{1}{5}$  sec., H. M. Johnson, A.†, 1886; John Owen, jr., A.\*, 1890. 10 $\frac{1}{5}$  sec., H. S. Brooks, jr. (Yale), A. I.\*, 1884; C. H. Sherrill (Yale), A. I.\*, 1889 and 1890.

*220 yards.*—21 $\frac{1}{3}$  sec., C. G. Wood, E.\*, 1887. 22 sec., Wendell Baker, against time, A.\*, 1886. 22 $\frac{1}{3}$  sec., C. H. Sherrill (Yale), A. I.\*, 1890.

*440 yards.*—47 $\frac{3}{4}$  sec., W. Baker, against time, A.\*, 1886. 48 $\frac{1}{4}$  sec., R. Buttery, E.†, 1873. 50 sec., W. C. Dohm (Princeton), A. I.\*, 1889.

*880 yards.*—1 min. 53 $\frac{1}{2}$  sec., Frank Hewit, New Zealand\*, 1871. 1 min. 55 $\frac{1}{4}$  sec., W. C. Dohm, A.\*, 1889. 1 min. 57 $\frac{1}{3}$  sec., W. C. Dohm, A. I.\*, 1890.

*1 mile.*—4 min. 12 $\frac{3}{4}$  sec., W. G. George, E.†, 1886. 4 min. 27 $\frac{2}{3}$  sec., L. E. Myers, A.\*, 1882. 4 min. 29 $\frac{1}{3}$  sec., C. O. Wells (Amherst), A. I.\*, 1890.

*3 miles.*—14 min. 19 $\frac{1}{2}$  sec., P. Cannon, S.†, 1888. 14 min. 36 sec., J. White, E.†, 1863. 14 min. 51 sec., E. Case, A.†, 1887. 14 min. 39 sec., W. D. Day, A.\*, 1890.

### JUMPING.

*High jump, standing.*—5 ft. 8 $\frac{1}{2}$  in. (weights), T. F. Kearney, A.†, 1889. 5 ft. 1 $\frac{1}{2}$  in. (without weights), Samuel Crook, A.\*, 1890. 5 ft. 3 in., E. W. Johnson, A.\*, 1878.

*High jump, running.*—6 ft. 4 in. (without weights), W. B. Page, A.\*, 1887. 6 ft. 6 in. (with weights), J. H. Fitzpatrick, A.†, 1889. 6 ft. 2½ in., J. M. Brooks, E.\*, 1876. 5 ft. 11¾ in., W. B. Page (Univ. of Pa.), A. I.\*, 1886.

*Broad jump, standing.*—With weights: 14 ft. 5½ in., G. W. Hamilton (22 lbs.) A.†, 1879; 12 ft. 9½ in., L. Helwig (16 lb. dumb-bells), A.\*, 1884. Without weights: 10 ft. 10½ in., H. M. Johnson, A.†, 1884; 12 ft. 1½ in., J. Darby, E.†, 1890.

*Broad jump, running.*—With weights: 23 ft. 3¾ in., Chas. F. Biggar, C.†, 1879. Without weights: 23 ft. 3¾ in. (toe to heel), M. W. Ford, A.\*, 1886; 23 ft. 3¼ in. (from scratch), A. F. Copeland, A.\*, 1890; 22 ft. 6 in., T. G. Shearman, jr. (Yale), A. I.\*, 1889.

*Three jumps, standing.*—With weights: 40 ft. 9½ in., T. F. Kearney, A.†, 1889; 35 ft. 9 in., W. S. Lawton, A.\*, 1876. Without weights: 34 ft. 4½ in., M. W. Ford, A.\*, 1885.

*Ten jumps, standing.*—Without weights: 113 ft. 5½ in., M. W. Ford, A.\*, 1886; 111 ft. 4 in., H. M. Johnson, H.†, 1888.

*Hop, step, and jump, standing.*—With weights: 37 ft. ½ in., J. F. Hartnett (15 lbs.), A.†, 1889; 31 ft. 7 in., W. W. Butler, A.\*, 1886; 33 ft. 5½ in., W. J. Rochelt, I.\*, 1888. Without weights: 31 ft. 10 in., Gavin Tait, S.†, 1862; 31 ft. 7½ in., D. M. Sullivan, C.†, 1885; 29 ft. 11 in., J. W. Rich, A.\*, 1890.

*Hop, step, and jump, running.*—48 ft. 8 in., Thomas Burrows, A.†, 1884. 44 ft. 11 in., E. B. Bloss, A.\*, 1890. 48 ft. 3 in., John Purcell, I.\*, 1887. 40 ft. 2 in., D. Anderson, E.†, 1865. 47 ft. 8 in., R. Knox, S.†, 1870.

*Hitch and kick.*—9 ft. 8 in., James Corsair, A.†, 1874. 9 ft. 1 in., D. C. Wilbur, A.\*, 1888. 9 ft., E. W. Johnson, C.†, 1878.

*Hurdle race, 120 yards, 10 flights.*—16 sec., C. N. Jackson, E.†, 1865. H. L. Williams, A.†, 1890. 16½ sec., D. D. Balger, I.\*, 1890. 16½ sec., H. L. Williams (Yale), A. I.\*, 1890.

*Pole vaulting, high.*—11 ft. 7 in., E. L. Stones, E.\*, 1888. 11 ft. 5 in., H. H. Baxter, A.\*, 1887. 10 ft. 9 in., E. D. Ryder (Yale), A. I.\*, 1891.

#### MISCELLANEOUS SPORTS.

*Putting the shot, 16 pounds (7 ft. run).*—53 ft. 11 in., G. R. Gray, A.\*, 1890. 50 ft. 9 in., Donald Dinnie, S.†, 1878. 50 ft. ½ in., John McPherson, A.†, 1887. 40 ft. 9½ in., A. B. Coxe (Yale), A. I.\*, 1887.

*Throwing the hammer, 16 pounds (with run).*—162 ft., Donald Dinnie, S.†, 1872. 109 ft. 6 in., Duncan C. Ross, A.†, 1889 (handle 3 ft. 6 in. outside socket, no follow).

*Throwing the hammer, 16 pounds, standing.*—138 ft., Donald Dinnie, S.†, 1873. 108 ft. 3 in., W. L. Conden, A.\*, 1888. 91 ft. 6 in., W. L. Conden, A.\*, 1888 (one hand). 98 ft. 6 in., A. B. Coxe (Yale), A. I.\*, 1887 (hammer 4 ft. over all).



*Throwing the 56-pound weight.*—For distance, unlimited run, with follow, 36 ft. 6 in., J. S. Mitchell, A.\*, 1888.

*Throwing the base-ball, distance.*—406 ft.  $\frac{1}{2}$  in., Ed. Crane, A.†, and 402 ft. 5 in., 1884. 402 ft.  $2\frac{1}{2}$  in., H. Vaughn, A.†, 1890.

*Foot-ball.*—Place kick, with a run : 200 ft. 8 in., Wm. P. Chadwick, A.\*, 1886. Drop kick : 172 ft. 8 in., F. Hardgrave, Australia, 1882 ; 168 ft.  $7\frac{1}{2}$  in., J. E. Duffy, Ann Arbor, A. I.\*, 1886.

*Back jump, with weights, one jump, measured from heel to toe.*—12 ft.  $1\frac{1}{4}$  in., F. F. Kearney, A.†, 1889.

*Greatest distance run in 1 hour.*—11 miles 970 yds., L. Bennet (Deerfoot), E.†, 1863. *Walked* : 8 miles 302 yds., John Meagher, A.†, 1882.

*Sack race.*—1 mile in  $11\frac{1}{2}$  min., Anthony Thorp, artillery ground, England, 1774 ; 100 yds. in  $15\frac{1}{8}$  sec., James Smith, C.†, 1886.

*Hopping.*—80 yds. in  $11\frac{1}{8}$  sec., Ed. Turner, E.†, 1878.

## INDIVIDUAL ATHLETIC RECORD.

Name, ----- Nationality, ----- Born at, ----- Rank, -----  
 Station, ----- Age, ----- Weight, ----- Height, ----- Chest  
 measure, expanded, ----- ; exhausted, ----- Size of fore-arm -----;  
 upper arm, bent, ----- Number of personal lifts (from arms-length to  
 chin), no rest, ----- 100-yard dash, ----- 220-yard run, -----  
 440-yard run, ----- 880-yard run, ----- 1-mile run, ----- 3-mile  
 run, ----- 1-mile walk, ----- 3-mile walk, ----- High jump, stand-  
 ing, ----- High jump, running, ----- Broad jump, standing, -----  
 Broad jump, running, ----- Hop, skip, and jump, ----- 3 standing  
 jumps, ----- 10 standing jumps, ----- Hurdle race, ----- Window  
 leap, ----- Hitch and kick, ----- Vaulting, ----- Pole leaping,  
 high, ----- Pole leaping, broad, ----- Putting the shot, 16 pounds,  
 ----- Throwing the hammer, 16 pounds, ----- Throwing the 56-  
 pound weight, ----- Climbing the rope, ----- Throwing the base-  
 ball, accuracy, ----- Throwing the base-ball, distance, -----

### MILITARY.

Throwing the hand grenade, accuracy, ----- Throwing the hand gre-  
 nade, distance ----- Throwing the javelin, accuracy, ----- Throwing  
 the javelin, distance, ----- Standing jump (full equipment), high, -----  
 Standing jump (full equipment), broad, ----- Running jump (full equip-  
 ment), high, ----- Running jump (full equipment), broad, -----  
 100-yard dash (full equipment), ----- 440-yard dash (full equipment),  
 ----- 1-mile walk (full equipment), ----- 1-mile run (full equipment),  
 ----- Obstacle race (120 yards), 10 obstructions (full equipment), -----  
 Rolling the artillery wheel, 100 yards, -----

### MISCELLANEOUS.

-----  
 -----  
 -----

Date, -----

## AMERICAN ARMY ATHLETIC ASSOCIATION.

### PRIZE CERTIFICATE.

*To whom it may concern.*

GREETING: This is to certify that at a duly organized Athletic Tournament, publicly held at ....., and open to officers and men of the Regular Army of the United States, belonging to the ..... Branches of this Association :

[Name.] .....

[Rank.] .....

[Station.] .....

took in a fair contest under the rules of this Association ..... place  
for excelling in .....

[Record.] .....

He is therefore announced as .....

.....

..... *U. S. Army.*

[Date.] .....

[Station.] .....





